

## HISTORY INFORMATION FOR THE FOLLOWING MANUAL:

# SERVICE MANUAL

# EX2K CHASSIS

MODEL NAME

REMOTE COMMANDER

DESTINATION

**KDL-32L504**

RM-YD028

US

**ORIGINAL MANUAL ISSUE DATE: 7/2009**

 : UPDATED ITEM

REVISION DATE

SUBJECT

7/2009

No revisions or updates are applicable at this time.

9/2009

Updated Exploded View Section to remove LCD Panel specific information. Replaced page 47.

9/2009

Updated Exploded View Section to include Accessories and Packing, Miscellaneous and Remote Commander Sections. Replaced page 50.

LCD DIGITAL COLOR TELEVISION

**SONY®**

# SERVICE MANUAL

# EX2K CHASSIS

<u>MODEL NAME</u>	<u>REMOTE COMMANDER</u>	<u>DESTINATION</u>
<b>KDL-32L504</b>	RM-YD028	US



KDL-32L504



RM-YD028

LCD DIGITAL COLOR TELEVISION

# SONY®

## TABLE OF CONTENTS

SECTION TITLE	PAGE	SECTION TITLE	PAGE
Specifications .....	4	<b>SECTION 3: DIAGRAMS.....</b>	<b>20</b>
Warnings and Cautions .....	6	3-1. Circuit Boards Location .....	20
Safety-Related Component Warning .....	7	3-2. Printed Wiring Boards and Schematic Diagrams Information .....	20
Safety Check-Out .....	9	3-3. Block Diagram .....	22
Self-Diagnostic Function.....	10	3-4. Schematics and Supporting Information .....	23
<b>SECTION 1: DISASSEMBLY.....</b>	<b>12</b>	A Board Schematic Diagram (1 of 17).....	23
1-1. Rear Cover Removal.....	12	A Board Schematic Diagram (2 of 17).....	24
1-2. Switch Unit Removal (Contains H1 Board) .....	12	A Board Schematic Diagram (3 of 17).....	25
1-3. A Board and G2BE (Power) Board Removal .....	13	A Board Schematic Diagram (4 of 17).....	26
1-4. Table-Top Stand Assembly and Under Cover Removal .....	13	A Board Schematic Diagram (5 of 17).....	27
1-5. Loudspeaker Removal .....	14	A Board Schematic Diagram (6 of 17).....	28
1-6. Brackets and Spine Removal.....	15	A Board Schematic Diagram (7 of 17).....	29
1-7. H2 Board and LCD Panel Removal .....	16	A Board Schematic Diagram (8 of 17).....	30
1-7-1. Cleaning the LCD Panel .....	16	A Board Schematic Diagram (9 of 17).....	31
1-8. ETC-Inverter MT Board Removal.....	17	A Board Schematic Diagram (10 of 17).....	32
WIRE DRESSING .....	18	A Board Schematic Diagram (11 of 17).....	33
<b>SECTION 2: SERVICE ADJUSTMENTS.....</b>	<b>19</b>	A Board Schematic Diagram (12 of 17).....	34
2-1. Resetting to Factory Defaults.....	19	A Board Schematic Diagram (13 of 17).....	35
		A Board Schematic Diagram (14 of 17).....	36
		A Board Schematic Diagram (15 of 17).....	37
		A Board Schematic Diagram (16 of 17).....	38
		A Board Schematic Diagram (17 of 17).....	39
		G2BE (Power) Board Schematic Diagram .....	41
		H1 Board Schematic Diagram.....	42
		H2 Board Schematic Diagram.....	44
		<b>SECTION 4: EXPLODED VIEWS .....</b>	<b>46</b>
		4-1. Rear Cover Assembly and Table-Top Stand Assembly .....	46
		4-2. Chassis .....	47
		4-3. Bezel Assembly and LCD Panel .....	48
		4-4. Screw Legend .....	49
		<b>APPENDIX A: ENCRYPTION KEY COMPONENTS .....</b>	<b>A-1</b>

## SPECIFICATIONS

**Power Requirements** 120V - 240V AC, 50/60Hz

### VIDEO (IN) 1/2:

#### **S Video (4-Pin Mini DIN) (Video 2 only)**

Y: 1.0 Vp-p, 75 ohms unbalanced, sync negative

C: 0.286 Vp-p (Burst signal), 75 ohms

#### **Video**

1 Vp-p, 75 ohms unbalanced, sync negative

#### **Audio**

500 mVrms (Typical)

Impedance: 47 kilohms

### COMPONENT IN 1/2:

#### **Y<sub>P</sub> B<sub>P</sub> R<sub>P</sub> (Component Video)**

Y: 1.0 Vp-p, 75 ohms unbalanced, sync negative

B<sub>P</sub>: 0.7 Vp-p, 75 ohms

R<sub>P</sub>: 0.7 Vp-p, 75 ohms

Signal format: 480i, 480p, 720p, 1080i, 1080p

#### **Audio**

500 mVrms (Typical)

Impedance: 47 kilohms

### HDMI IN 1/2/3:

#### **HDMI**

Video: 480i, 480p, 720p, 1080i, 1080p, 1080/24p

Audio: Two channel linear PCM 32, 44.1, and 48 kHz,  
16, 20 and 24 bits, Dolby Digital

#### **Audio (HDMI IN 1 only):**

500 mVrms (Typical)

Impedance: 47 kilohms

### AUDIO OUT:

500 mVrms (Typical)

### DIGITAL AUDIO OUT (OPTICAL):

PCM/Dolby Digital optical signal

### PC IN:

Analog RGB (D-sub 15-pin):

0.7 Vp-p, 75 ohms, positive

### PC AUDIO INPUT:

Stereo mini jack

500 mVrms (Typical)

Impedance: 47 kilohms

## Licensing Information

Macintosh is a trademark of Apple Inc., registered in the U.S. and other countries.

HDMI, the HDMI logo and High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI Licensing LLC.


Ferguson Patent Properties, LLC:

U.S. Patent No. 5,717,422

U.S. Patent No. 6,816,141

Manufactured under license from Dolby Laboratories. Dolby and the double-D symbol are trademarks of Dolby Laboratories.

Blu-ray Disc is a trademark.

"BRAVIA", BRAVIA and  are trademarks or registered trademarks of Sony Corporation.

"PLAYSTATION" is a registered trademark and "PS3" is a trademark of Sony Computer Entertainment Inc.

Your BRAVIA TV is ENERGY STAR qualified in the 'Home' mode. It meets strict energy efficiency guidelines set by the U.S. Environmental Protection Agency and Department of Energy. ENERGY STAR is a joint program of these government agencies, designed to promote energy efficient products and practices.

- When the TV is initially set up, it is designed to meet ENERGY STAR requirements.

- Changes to certain features, settings, and functionalities of this TV (i.e. Picture/Sound, Light Sensor, Power Savings) can slightly change the power consumption.

Depending upon such changed settings, the power consumption may increase which possibly could exceed the limits required for the ENERGY STAR qualification.





	<b>KDL-32L504</b>	
<b>Power Consumption</b>	<b>in use</b>	135W
	<b>in standby</b>	Less than 0.5 W
<b>Speaker Output (W)</b> <b>Speaker/Full Range (2)</b>		10W + 10W
	<b>mm</b> <b>in</b>	34 X 160 mm 1 <sup>3/8</sup> x 6 <sup>1/3</sup> in
<b>Dimensions (W x H x D)</b> <b>with stand</b>	<b>mm</b> <b>in</b>	807 x 557 x 222 mm 31 <sup>7/8</sup> x 22 x 8 <sup>3/4</sup> in
	<b>without stand</b>	
	<b>mm</b> <b>in</b>	807 x 508 x 94 mm 31 <sup>7/8</sup> x 20 x 3 <sup>3/4</sup> in
<b>wall-mount hole pattern (mm)</b>		200 x 200
<b>wall-mount screw size (mm)</b>		M6 8-12
<b>Mass</b> <b>with stand</b>	<b>kg</b> <b>lbs</b>	12.7 kg 28 lbs 0 oz
	<b>without stand</b>	
	<b>kg</b> <b>lbs</b>	11.4 kg 25 lbs 3 oz

All measurements are approximations.

#### Television system

NTSC	American TV Standard
ATSC (8VSB terrestrial)	ATSC compliant 8VSB
QAM on cable	ANSI/SCTE 07 2000

#### Channel coverage

	<b>Analog</b>	<b>Digital</b>
Terrestrial	2-69	2-69
Cable	1-135	1-135

#### Antenna

75-ohm external terminal for RF inputs

#### Panel System

LCD (Liquid Crystal Display) Panel

#### Display Resolution (horizontal x vertical):

1,366 dots x 768 lines

#### Screen Size (measured diagonally)

approx. 31.5 inches

#### Supplied Accessories

Remote Commander RM-YD028  
Two Size AA (R6) Batteries  
Operating Instructions  
Quick Setup Guide  
Warranty Card  
Safety and Regulatory Booklet  
Attaching to the Table-Top Stand  
Screws (4)

#### Optional Accessories

Connecting Cables  
Support Belt Kit  
Wall-Mount Bracket  
SU-WL500

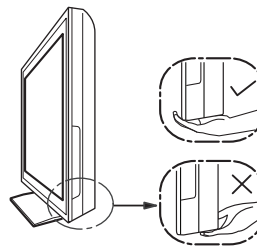
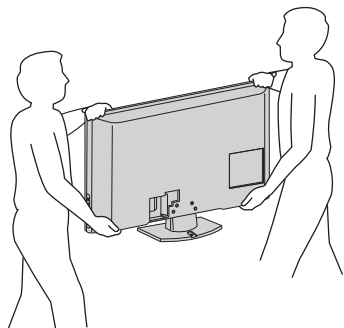
## WARNINGS AND CAUTIONS

### CAUTION

These servicing instructions are for use by qualified service personnel only. To reduce the risk of electric shock, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

### CARRYING THE TV

- Disconnect all cables when carrying the TV.
- Carry the TV with the adequate number of people; larger size TVs require two or more people.
- Placement of the hands carrying the TV is very important for safety and to avoid damage.



### WARNING!!

An isolation transformer should be used during any service to avoid possible shock hazard, because of live chassis. The chassis of this receiver is directly connected to the ac power line.



### SAFETY-RELATED COMPONENT WARNING!!

Components identified by shading and ⚠ mark on the schematic diagrams, exploded views, and in the parts list are critical for safe operation. Replace these components with Sony parts whose part numbers appear as shown in this manual or in supplements published by Sony. Circuit adjustments that are critical for safe operation are identified in this manual. Follow these procedures whenever critical components are replaced or improper operation is suspected.

## SAFETY-RELATED COMPONENT WARNING

There are critical components used in LCD color TVs that are important for safety. These components are identified with shading and  $\triangle$  mark on the schematic diagrams and the electrical parts list. It is essential that these critical parts be replaced only with the part number specified in the electrical parts list to prevent electric shock, fire, or other hazard.

NOTE: Do not modify the original design without obtaining written permission from the manufacturer or you will void the original parts and labor guarantee.

## USE CAUTION WHEN HANDLING THE LCD PANEL

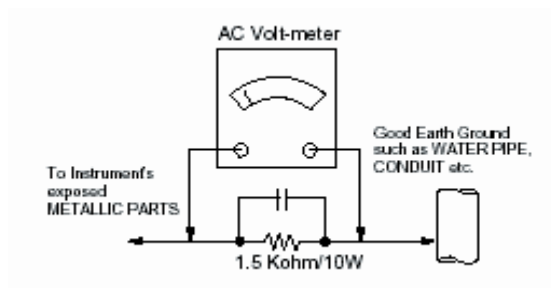
**When repairing the LCD panel, be sure you are grounded by using a wrist band.**

When installing the LCD panel on a wall, the LCD panel must be secured using the 4 mounting holes on the rear cover.

### To avoid damaging the LCD panel:

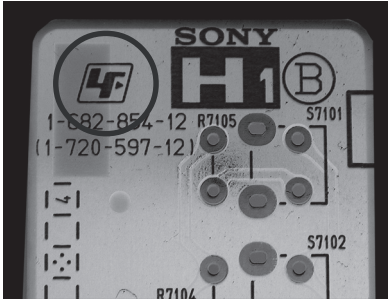
- do not press on the panel or frame edge to avoid the risk of electric shock.
- do not scratch or press on the panel with any sharp objects.
- do not leave the module in high temperatures or in areas of high humidity for an extended period of time.
- do not expose the LCD panel to direct sunlight.
- avoid contact with water. It may cause a short circuit within the module.
- disconnect the AC adapter when replacing the backlight (CCFL) or inverter circuit.  
(High voltage occurs at the inverter circuit at 650Vrms.)
- always clean the LCD panel with a soft cloth material.
- use care when handling the wires or connectors of the inverter circuit. Damaging the wires may cause a short.
- protect the panel from ESD to avoid damaging the electronic circuit (C-MOS).

## LEAKAGE CURRENT HOT CHECK CIRCUIT



**example 1**

The circuit boards used in these models have been processed using Lead Free Solder. The boards are identified by the LF logo located close to the board designation e.g. H1 etc [ see example ]. The servicing of these boards requires special precautions to be taken as outlined below.



It is strongly recommended to use Lead Free Solder material in order to guarantee optimal quality of new solder joints. Lead Free Solder is available under the following part numbers :

Part number	Diameter	Remarks
7-640-005-19	0.3mm	0.25Kg
7-640-005-20	0.4mm	0.50Kg
7-640-005-21	0.5mm	0.50Kg
7-640-005-22	0.6mm	0.25Kg
7-640-005-23	0.8mm	1.00Kg
7-640-005-24	1.0mm	1.00Kg
7-640-005-25	1.2mm	1.00Kg
7-640-005-26	1.6mm	1.00Kg

Due to the higher melting point of Lead Free Solder the soldering iron tip temperature needs to be set to 370 degrees centigrade. This requires soldering equipment capable of accurate temperature control coupled with a good heat recovery characteristics.

For more information on the use of Lead Free Solder, please refer to <http://www.sony-training.com>

## SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or touching high-wattage resistors.
3. Check that all control knobs, shields, covers, ground straps, and mounting hardware have been replaced. Be absolutely certain that you have replaced all the insulators.
4. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
5. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
6. Check the line cords for cracks and abrasion. Recommend the replacement of any such line cord to the customer.
7. Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instructions.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low voltage scale. The Simpson's 250 and Sanwa SH-63TRD are examples of passive VOMs that are suitable. Nearly all battery-operated digital multimeters that have a 2 VAC range are suitable (see Figure A).

### How to Find a Good Earth Ground

A cold-water pipe is a guaranteed earth ground; the cover-plate retaining screw on most AC outlet boxes is also at earth ground. If the retaining screw is to be used as your earth ground, verify that it is at ground by measuring the resistance between it and a cold-water pipe with an ohmmeter. The reading should be zero ohms.

If a cold-water pipe is not accessible, connect a 60- to 100-watt trouble- light (not a neon lamp) between the hot side of the receptacle and the retaining screw. Try both slots, if necessary, to locate the hot side on the line; the lamp should light at normal brilliance if the screw is at ground potential (see Figure B).

### Leakage Test

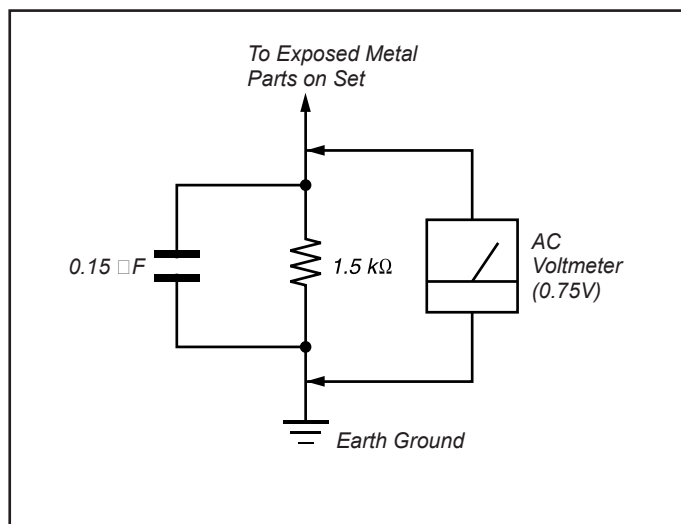


Figure A. Using an AC voltmeter to check AC leakage.

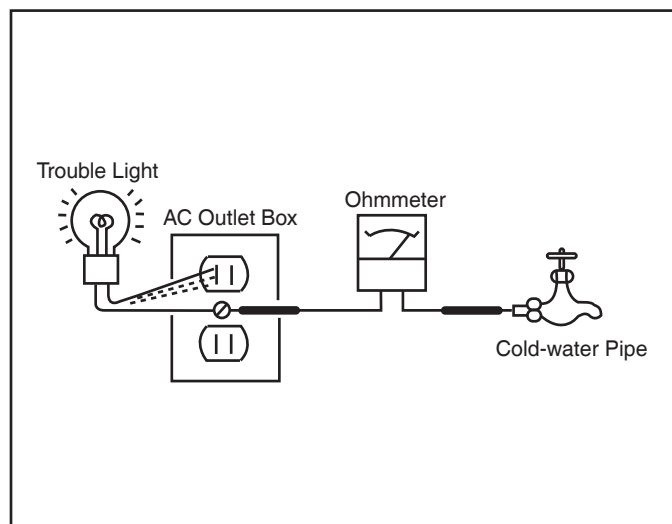


Figure B. Checking for earth ground.

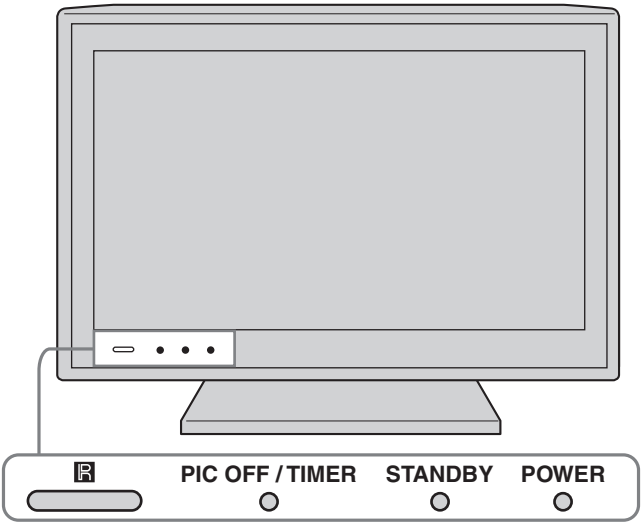
# SELF-DIAGNOSTIC FUNCTION

The units in this manual contain a self-diagnostic function. If an error occurs, the STANDBY LED indicator will automatically begin to flash. The number of times the LED flashes translates to a probable source of the problem. A definition of the STANDBY LED flash indicators is listed in the instruction manual for the user's knowledge and reference. If an error symptom cannot be reproduced, the Remote Commander can be used to review the failure occurrence data stored in memory to reveal past problems and how often these problems occur.

## 1. Diagnostic Test Indicators

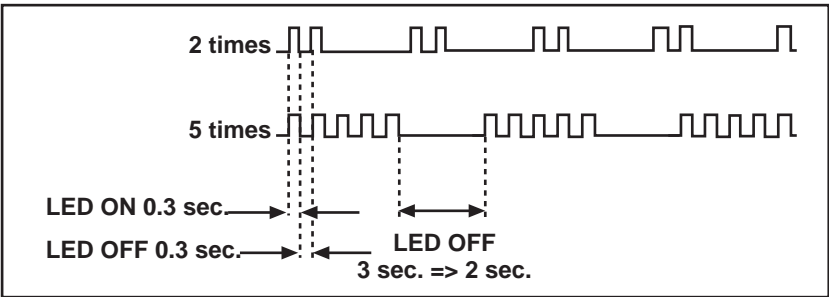
When an error occurs, the STANDBY LED indicator will flash a set number of times to indicate the possible cause of the problem. If there is more than one error, the indicator will identify the first of the problem areas.

### LED Indicators



### Description of LED Indicators


LED	LED Type	Description
POWER LED	Green LED	* Lights up in green when the TV set is turned on.
STANDBY LED	Red LED	* Lights up in red when TV is in PC power saving mode. * If LED blinks continuously, this may indicate that the TV needs servicing.
PIC OFF/ TIMER LED	Green or Orange LED	* Lights up in orange when the sleep timer is set. * Lights up in green when <b>Power Saving</b> is set to <b>Picture Off</b> .




POWER/STANDBY/LED Diagnostic Description

Diagnostic Item Description	Number of times STANDBY lamp flashes	Possible Location
Low B Error	3 times	A Board (Main) G2BE (Power) Board
TCON Power Error	5 times	LCD Panel
Backlight Error	6 times	LCD Panel G2BE (Power) Board
Audio Abnormal Detection	8 times	A Board (Main) Speaker

Viewing the Self Check Diagnostic List

- TV must be in standby mode. (Power off).
- Press the following buttons on the Remote Commander within a second of each other:  




The Self Check list displays.  This differs from accessing Service Adjustments.









Results for all of the following diagnostic items are displayed on screen. No error has occurred if the screen displays a "0".  
 NOTE: If the Service Menu display text is not completely visible, press the Menu **HOME** button on the Remote Commander to refresh the display.

SELF CHECK

**BACK**


003	LOW B ERROR 1	000
005	T-CON POWER ERROR	001
006	BACKLIGHT ERROR	000
008	AUDIO ABNORMAL DETECTION	000
00000 00012 00000 [Menu]Exit		

 0 indicates no error was detected  
 1 indicates an error was detected  
(Red indicates the last error that was detected)

        
      00000: Panel Operation Time by Hour (max 99999)  
      Deletion of Panel Operation Time by <7> - > <0> key  
   00012: Boot Count (max 99999)  
 00000: Total Operation Time by Hour (max 9999)

- To exit Self Check display, turn the power off. Press [Menu] Exit.
- To return to Service Mode screen select the BACK button.

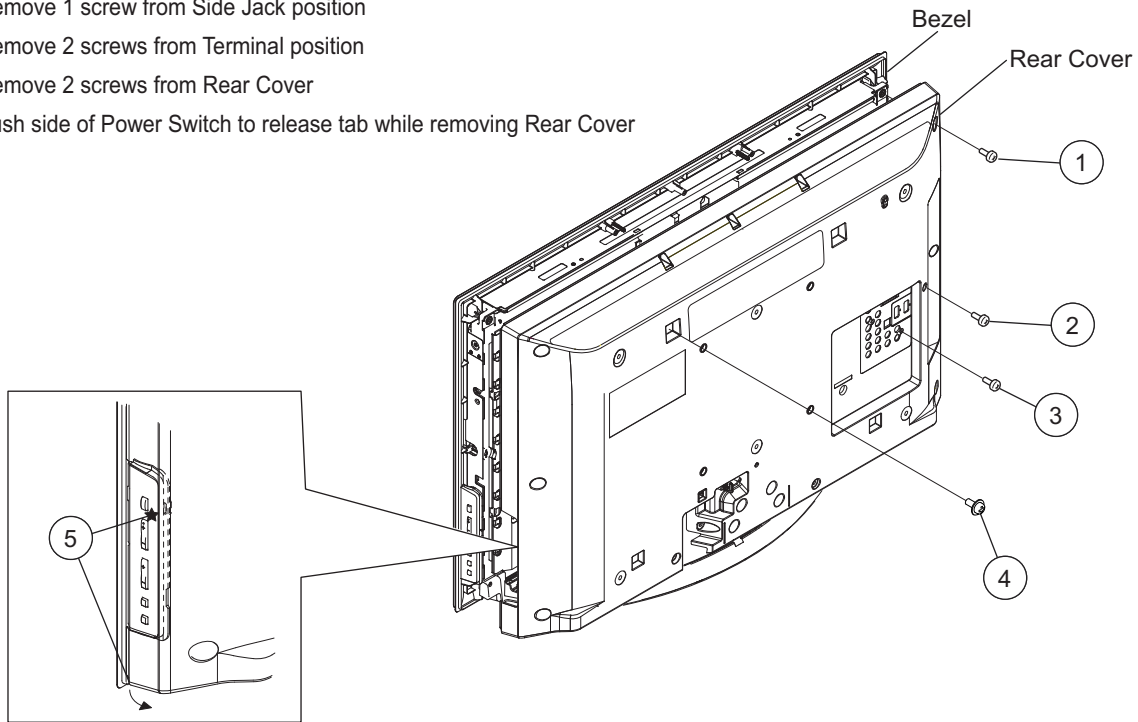
Clearing the Self Check Diagnostic List

- In Service Mode, press the Channel **8**  Channel **0**.

## SECTION 1: DISASSEMBLY

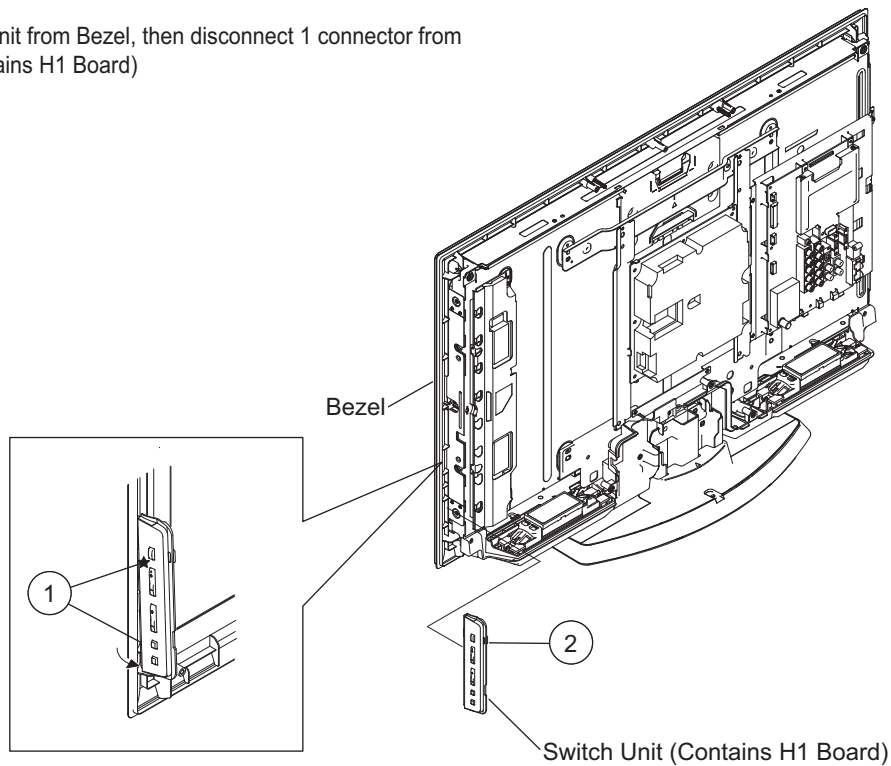
### 1-1. REAR COVER REMOVAL

- ① Remove 12 screws from Rear Cover
- ② Remove 1 screw from Side Jack position
- ③ Remove 2 screws from Terminal position
- ④ Remove 2 screws from Rear Cover
- ⑤ Push side of Power Switch to release tab while removing Rear Cover



### 1-2. SWITCH UNIT REMOVAL (CONTAINS H1 BOARD)

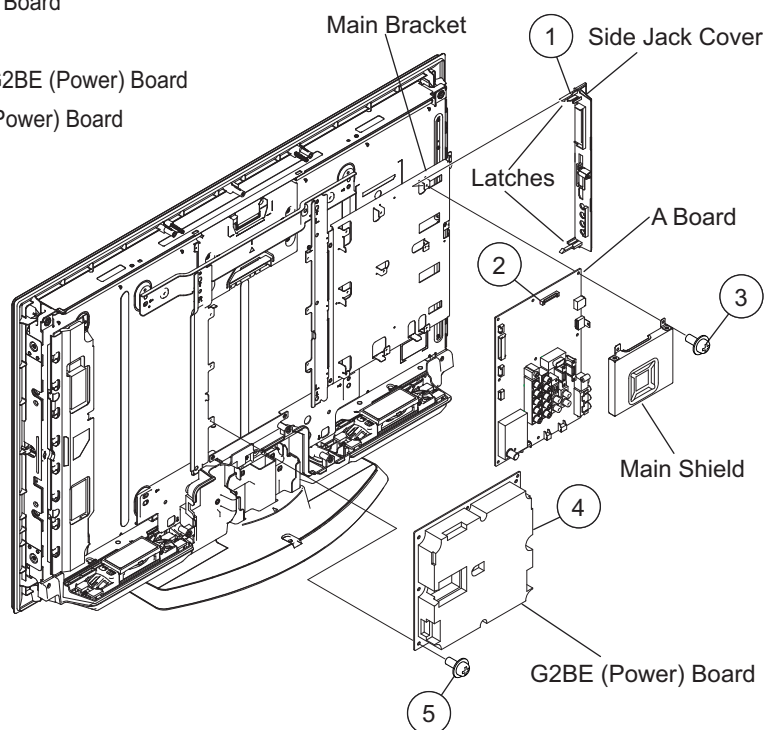
- ① Push side of Power Switch and release Bezel tab while lifting up Switch Unit from Bezel
- ② Slide out Switch unit from Bezel, then disconnect 1 connector from Switch Unit (Contains H1 Board)





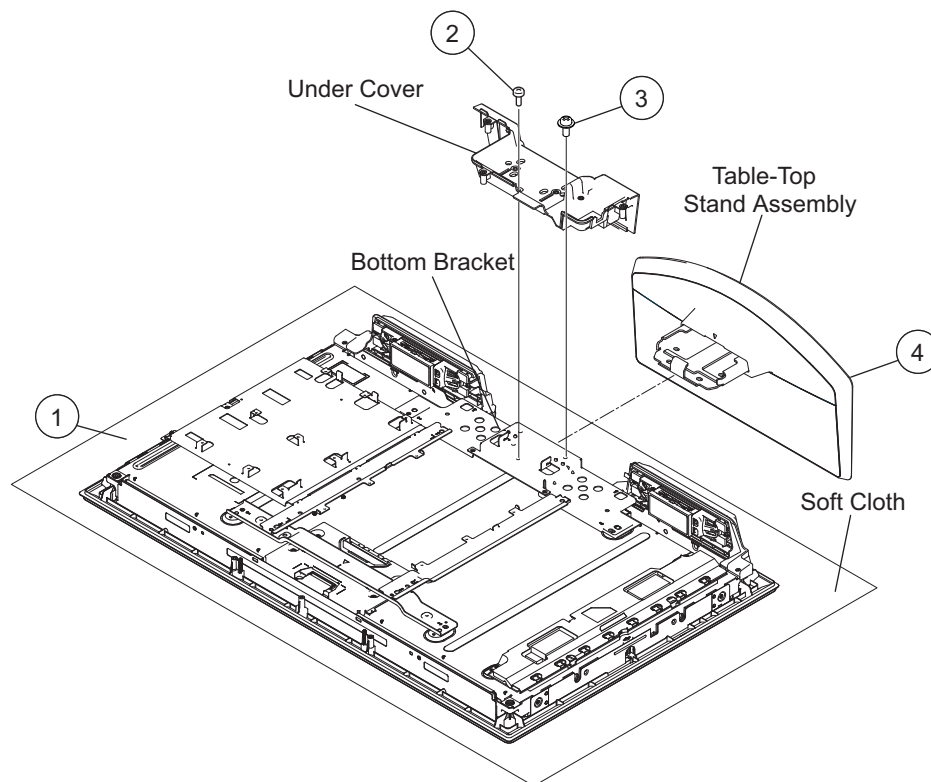
### 1-3. A BOARD AND G2BE (POWER) BOARD REMOVAL

- ① Lift top and bottom latches from Side Jack Bracket to unhook from Main Bracket
- ② Disconnect 7 connectors from A Board
- ③ Remove 9 screws from A Board
- ④ Disconnect 3 connectors from G2BE (Power) Board
- ⑤ Remove 6 screws from G2BE (Power) Board



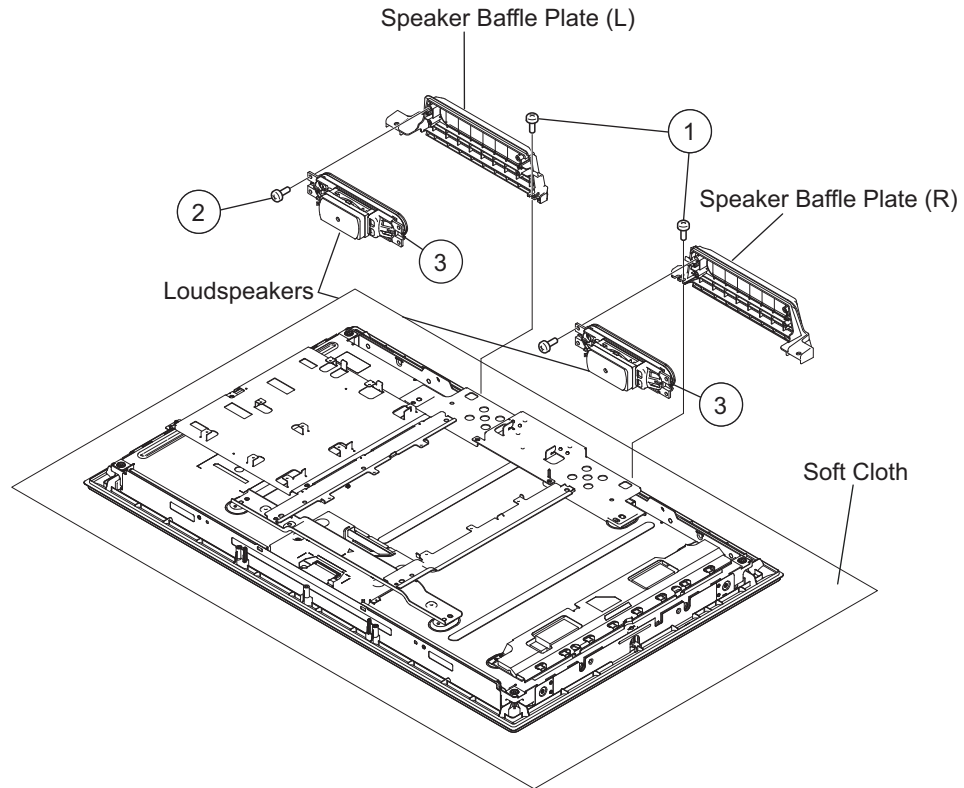
### 1-4. TABLE-TOP STAND ASSEMBLY AND UNDER COVER REMOVAL

- ① Gently place the TV set face down onto a soft cloth
- ② Remove 1 screw from Under Cover
- ③ Remove 4 screws Table-Top Stand Assembly
- ④ Slide Table-Top Stand Assembly out away from Bottom Bracket



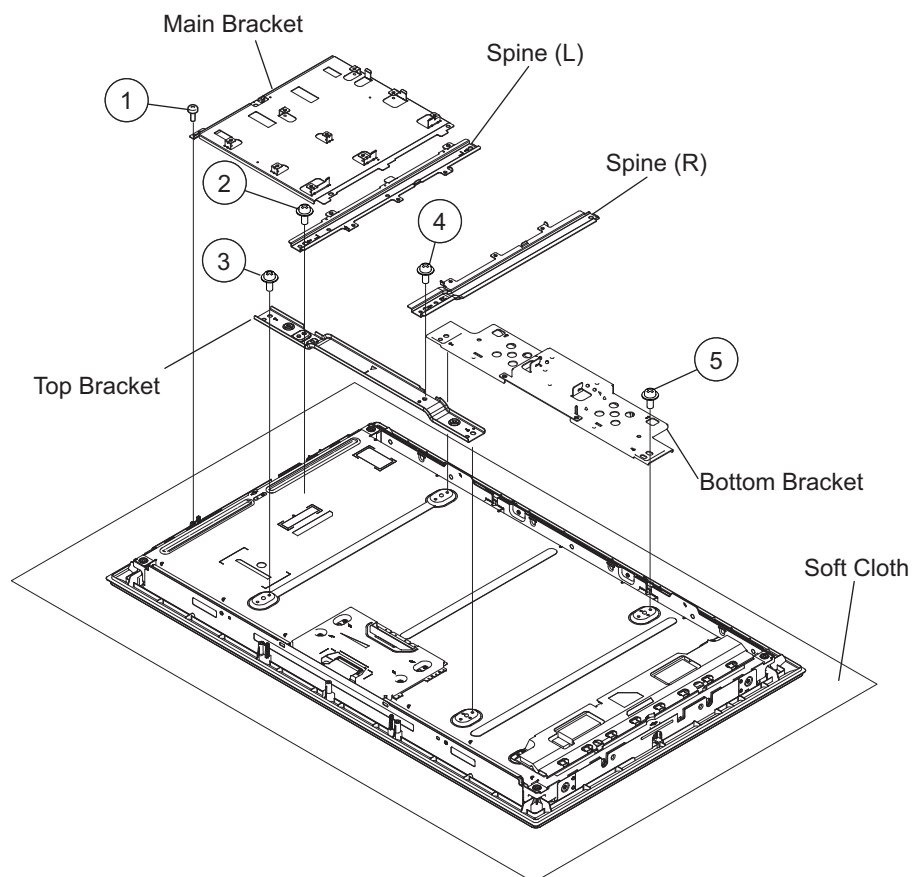
## 1-5. LOUDSPEAKER REMOVAL

- ① Remove 1 screw from each Speaker Baffle Plate (2 total)
- ② Remove 4 screws from each loudspeaker (8 total)
- ③ Disconnect speaker wire



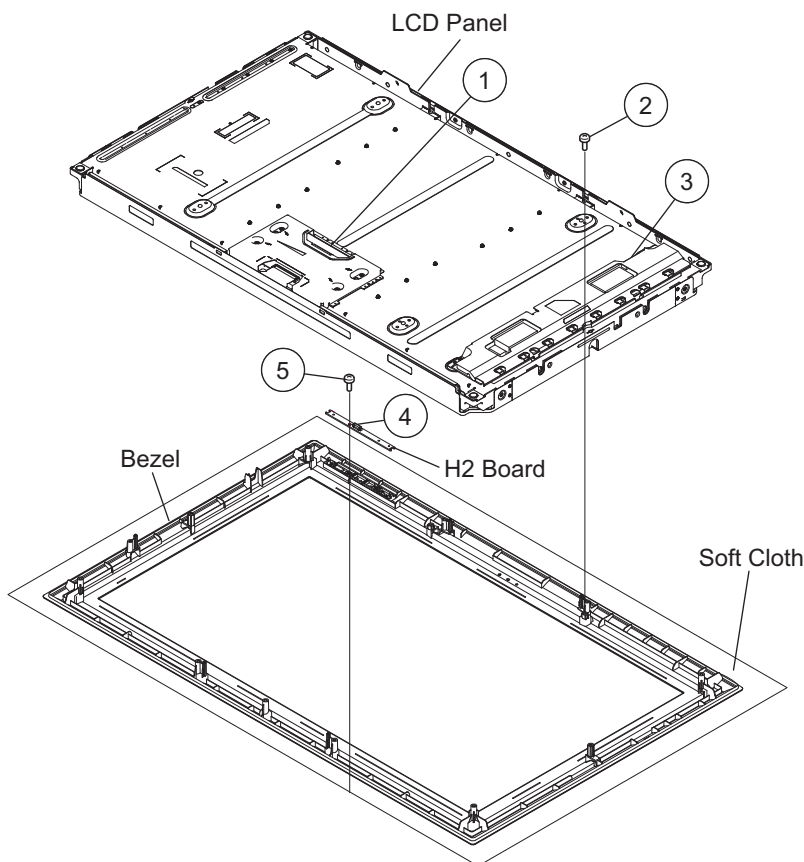
## 1-6. BRACKETS AND SPINE REMOVAL

- ① Remove 1 screw from Main Bracket and Bezel
- ② Remove 2 screws from Spine (L) and Top Bracket
- ③ Remove 2 screws from Top Bracket
- ④ Remove 2 screws from Spine (R)
- ⑤ Remove 2 screws from Bottom Bracket



## 1-7. H2 BOARD AND LCD PANEL REMOVAL

- ① Disconnect LVDS connector from TCON
- ② Remove 2 screws from bottom of panel and release LCD panel from Bezel
- ③ Disconnect 1 connector from Inverter Board
- ④ Disconnect 1 connector from H2 Board
- ⑤ Remove 1 screw from H2 Board



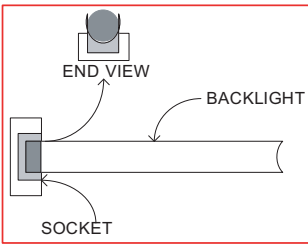
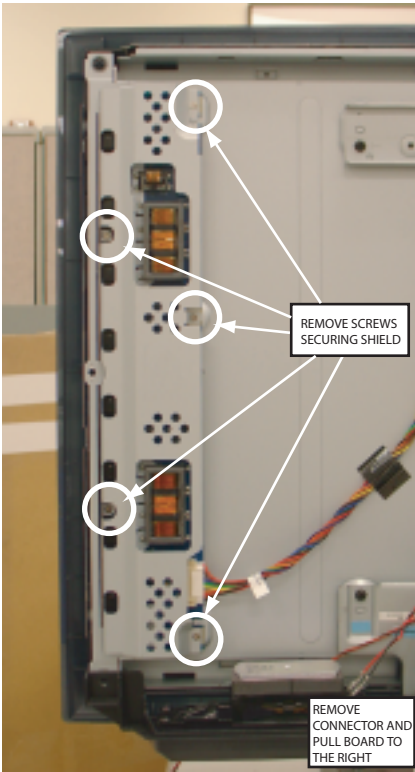
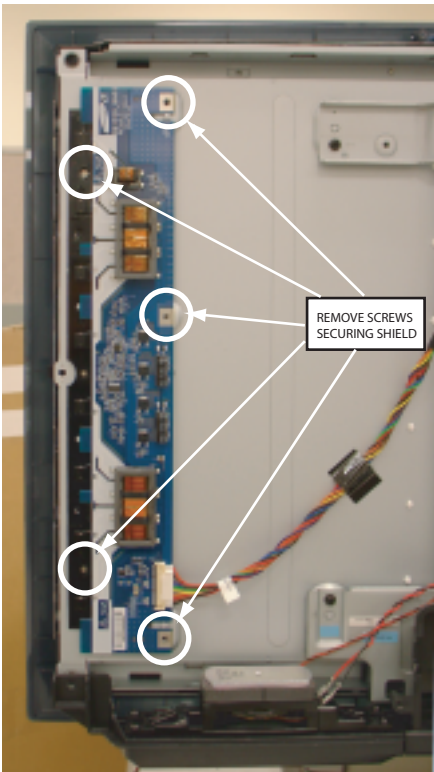
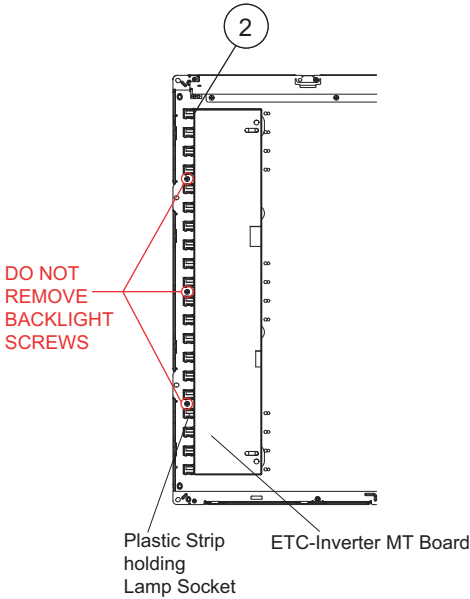
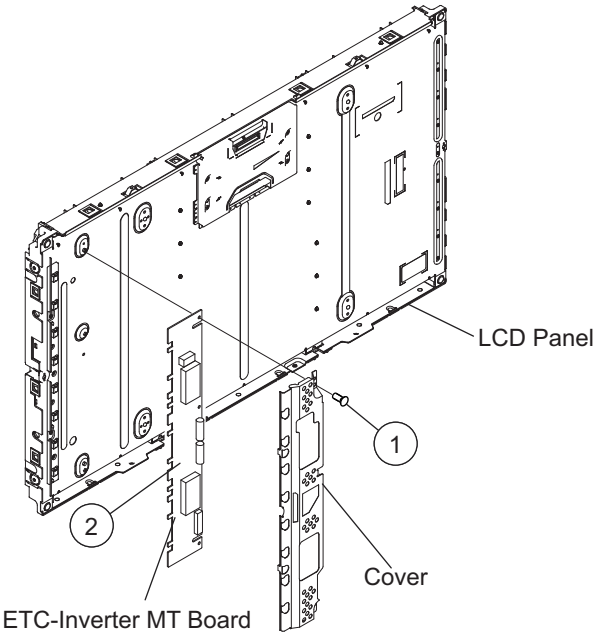
### 1-7-1. CLEANING THE LCD PANEL

**CAUTION:** When cleaning the TV, be sure to unplug the power cord to avoid any chance of electric shock.

- Clean the cabinet of the TV with a dry soft cloth.
- Wipe the LCD screen gently with a soft cloth.
- Stubborn stains may be removed with a cloth slightly moistened with a solution of mild soap and warm water.
- If using a chemically pretreated cloth, please follow the instruction provided on the package.
- Never use strong solvents such as a thinner, alcohol or benzene for cleaning.
- Periodic vacuuming of the ventilation openings is recommended to ensure to proper ventilation.

# 1-8. ETC-INVERTER MT BOARD REMOVAL

- ① Remove 5 screws from Board cover
- ② Pull out the Board from Lamp socket



**ETC-INVERTER MT BOARD REMOVAL**  
Only remove the screws securing the inverter cover which may be metal or plastic. The remaining plastic strip contains sockets for the fluorescent backlights and should never be loosened. The backlights will pop out of the sockets and/or break the backlight requiring a LCD panel replacement. The example shown is a 32" model but applies to all models.

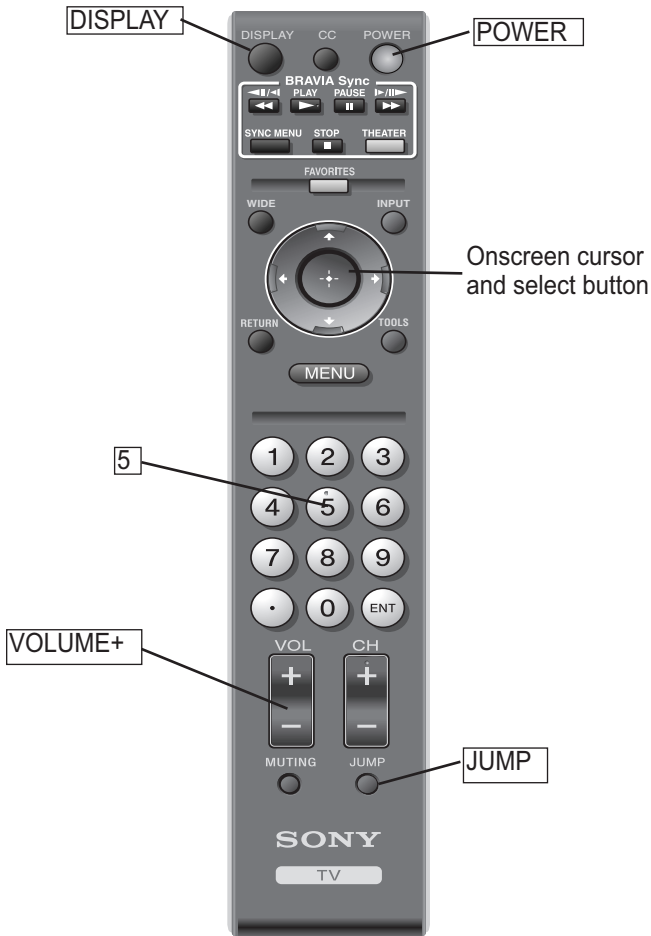


## SECTION 2: SERVICE ADJUSTMENTS

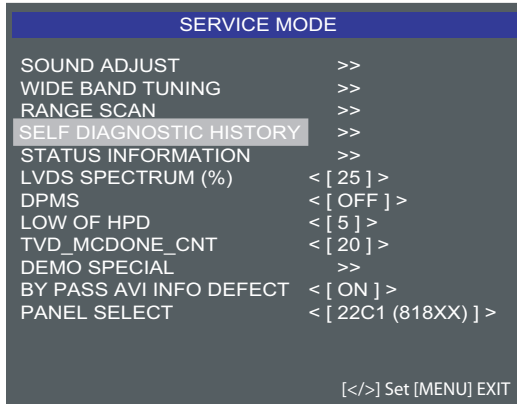
### 2-1. ACCESSING SERVICE MODE

1. TV must be in standby mode. (Power off).
2. Press the following buttons on the Remote Commander within a second of each other:

[DISPLAY] → Channel [5] → Volume [+] → [POWER].



RM-YD028



To select Service Mode item, use the Up and Down feature of the joystick on the remote or the volume and channel buttons on the top of the television.

### 2-2. RESETTING TO FACTORY DEFAULTS

Use the following instructions to restore the User Controls and Channel Memory settings to the preset factory conditions.

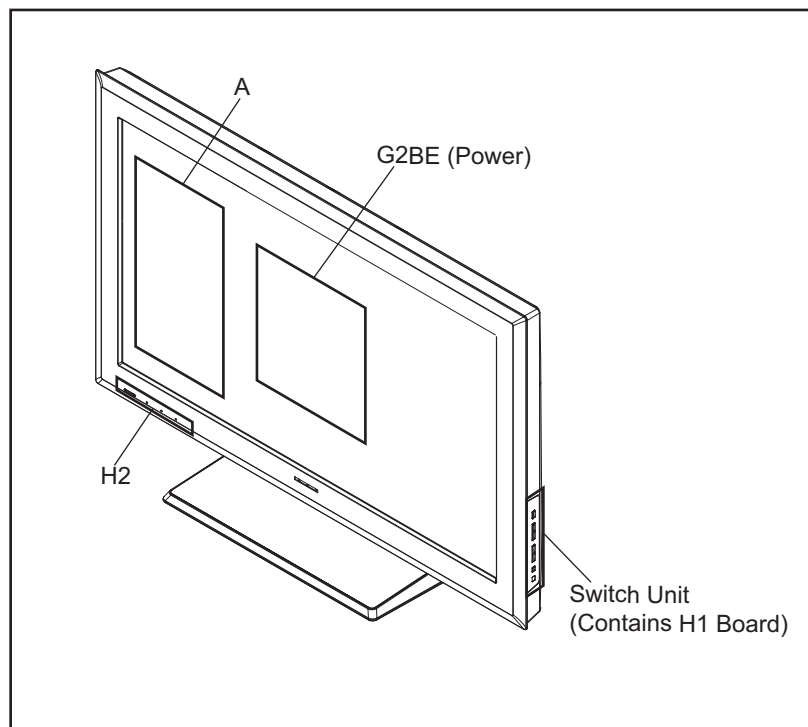
1. While holding down the [▲] on the Remote Commander, press the POWER button on the right side of the set.

The set restarts and displays the initial setup screen. This may take several minutes.

**Note:** Additional information regarding the Self-Diagnostic function, will be reviewed in the Training Manual for this model.

## SECTION 3: DIAGRAMS

### 3-1. CIRCUIT BOARDS LOCATION



### 3-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS INFORMATION

All capacitors are in  $\mu\text{F}$  unless otherwise noted.  $\text{pF}$  :  $\mu\text{F}$  50WV or less are not indicated except for electrolytics and tantalums.

All electrolytics are in 50V unless otherwise specified.

All resistors are in ohms.  $\text{k}\Omega=1000\Omega$ ,  $\text{M}\Omega=1000\text{k}\Omega$

Indication of resistance, which does not have one for rating electrical power, is as follows: Pitch : 5mm  
Rating electrical power :  $\frac{1}{4}\text{W}$

$\frac{1}{4}\text{W}$  in resistance,  $\frac{1}{10}\text{W}$  and  $\frac{1}{16}\text{W}$  in chip resistance.

 : nonflammable resistor

 : fusible resistor

 : internal component

 : panel designation and adjustment for repair

 : earth ground

 : earth-chassis

All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

Readings are taken with a color-bar signal input.

Readings are taken with a  $10\text{M}\Omega$  digital multimeter.

Voltages are DC with respect to ground unless otherwise noted.

Voltage variations may be noted due to normal production tolerances.

All voltages are in V.


S : Measurement impossibility.


 : B+line.

 : B-line. (Actual measured value may be different).

 : signal path. (RF)

Circled numbers are waveform references.

The components identified by shading and  symbol are critical for safety. Replace only with part number specified.

The symbol  indicates a fast operating fuse and is displayed on the component side of the board. Replace only with fuse of the same rating as marked.

**NOTE:** The components identified by a red outline and a  mark contain confidential information. Specific instructions must be adhered to whenever these components are repaired and/or replaced.

See Appendix A: Encryption Key Components in the back of this manual.



## REFERENCE INFORMATION

## RESISTOR

: RN METAL FILM

: RC SOLID

: FPRD NONFLAMMABLE CARBON

: FUSE NONFLAMMABLE FUSIBLE

: RW NONFLAMMABLE WIREWOUND : MPS METALIZED POLYESTER

: RS NONFLAMMABLE METAL OXIDE : MPP METALIZED POLYPROPYLENE

: RB NONFLAMMABLE CEMENT : ALB BIPOLAR

: ※ ADJUSTMENT RESISTOR : ALT HIGH TEMPERATURE

## CAPACITOR

: TA TANTALUM

: PS STYROL

: PP POLYPROPYLENE

: PT MYLAR

: MPS METALIZED POLYESTER

: MPP METALIZED POLYPROPYLENE

: ALB BIPOLAR

: ALT HIGH TEMPERATURE

: ALR HIGH RIPPLE

## COIL

: LF-8L MICRO INDUCTOR

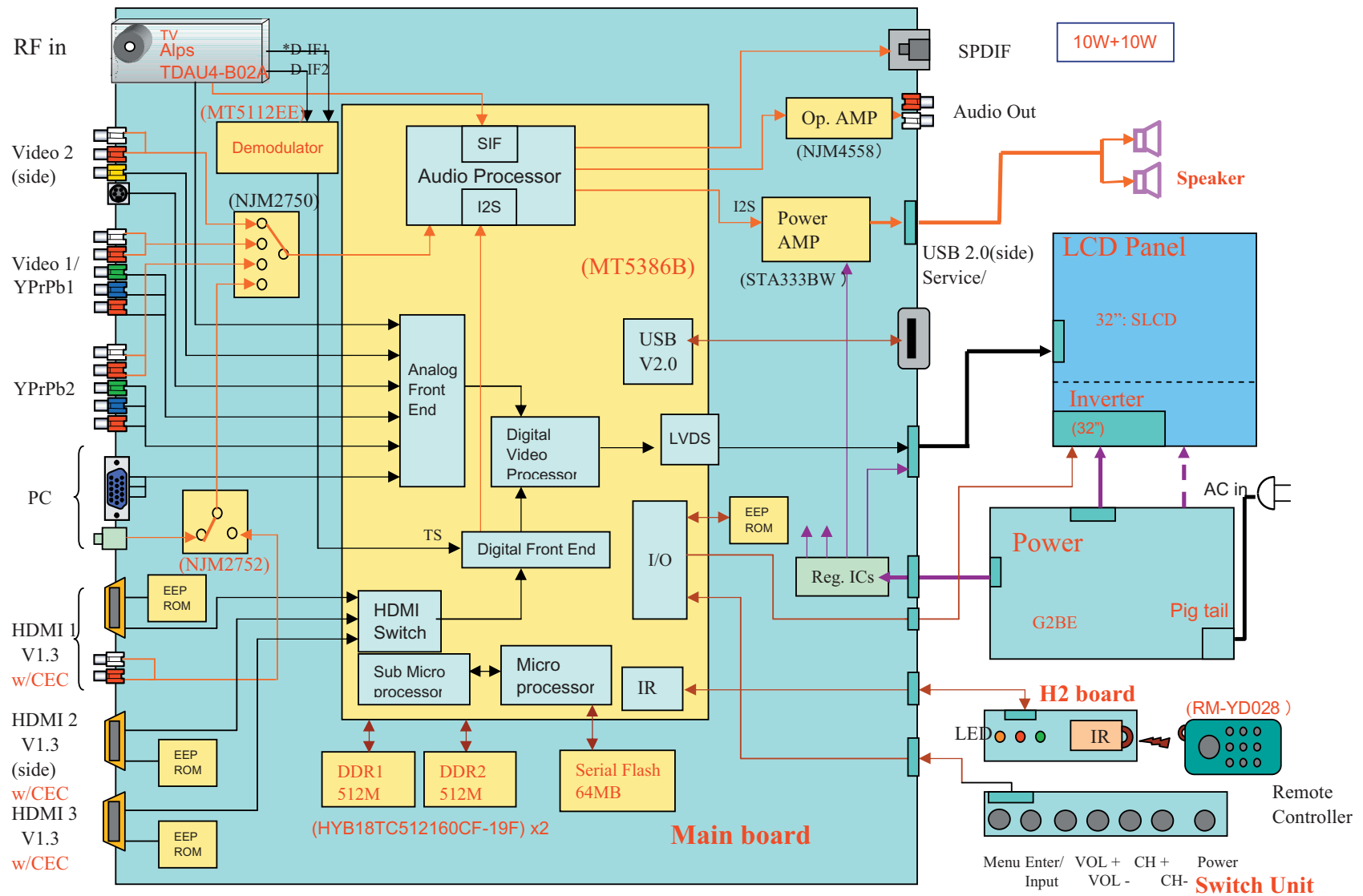
Terminal name of semiconductors in silk screen  
printed circuit (※)

	Device	Printed symbol	Terminal name	Circuit
1	Transistor		Collector Base Emitter	
2	Transistor		Collector Base Emitter	
3	Diode		Cathode Anode	
4	Diode		Cathode Anode (NC)	
5	Diode		Cathode Anode (NC)	
6	Diode		Common Anode Cathode	
7	Diode		Common Anode Cathode	
8	Diode		Common Anode Anode	
9	Diode		Common Anode Anode	
10	Diode		Common Cathode Cathode	
11	Diode		Common Cathode Cathode	
12	Diode		Anode Anode Cathode Anode	
13	Transistor (FET)		Drain Source Gate	
14	Transistor (FET)		Drain Source Gate	
15	Transistor (FET)		Source Drain Gate	
16	Transistor		Emitter Collector Base	
17	Transistor		C2(B1) E1 E2(B2) C1	
18	Transistor		C1(B2) E2 E1(B1) C2	
19	Transistor		C1 B2 E2 E1 B1 C2	
20	Transistor		C1 B2 E2 E1 B1 C2	
21	Transistor		E2 B1 E1 C2 C1(B2)	
22	Transistor		(B2) B1 E1 E2 C1 C2	
23	Transistor		(B2) E2 E1 B1 C2 C1	
—	Discrete semiconductor			

(Chip semiconductors that are not actually used are included.)

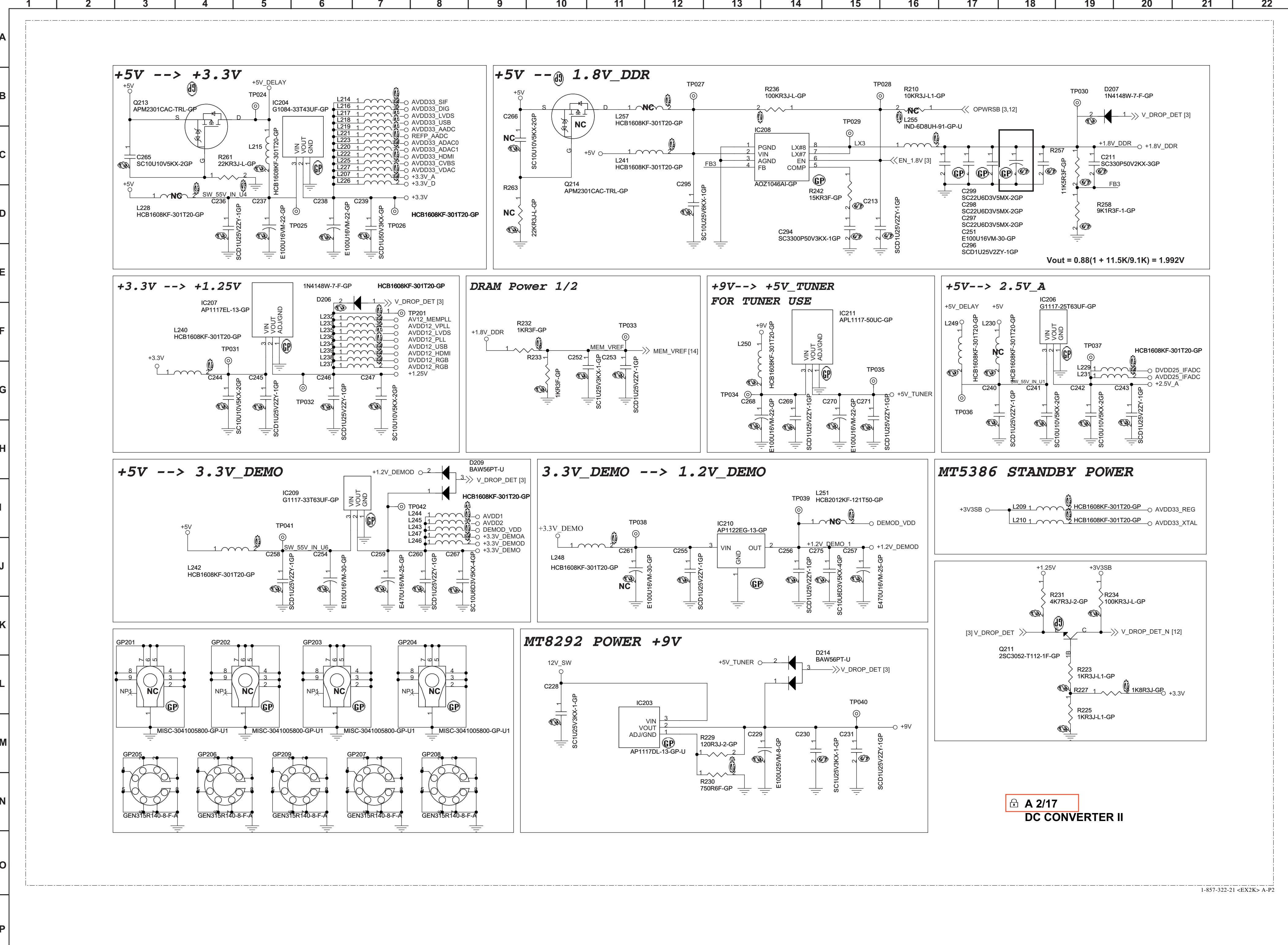
Ver.1.6

## 3-3. BLOCK DIAGRAM

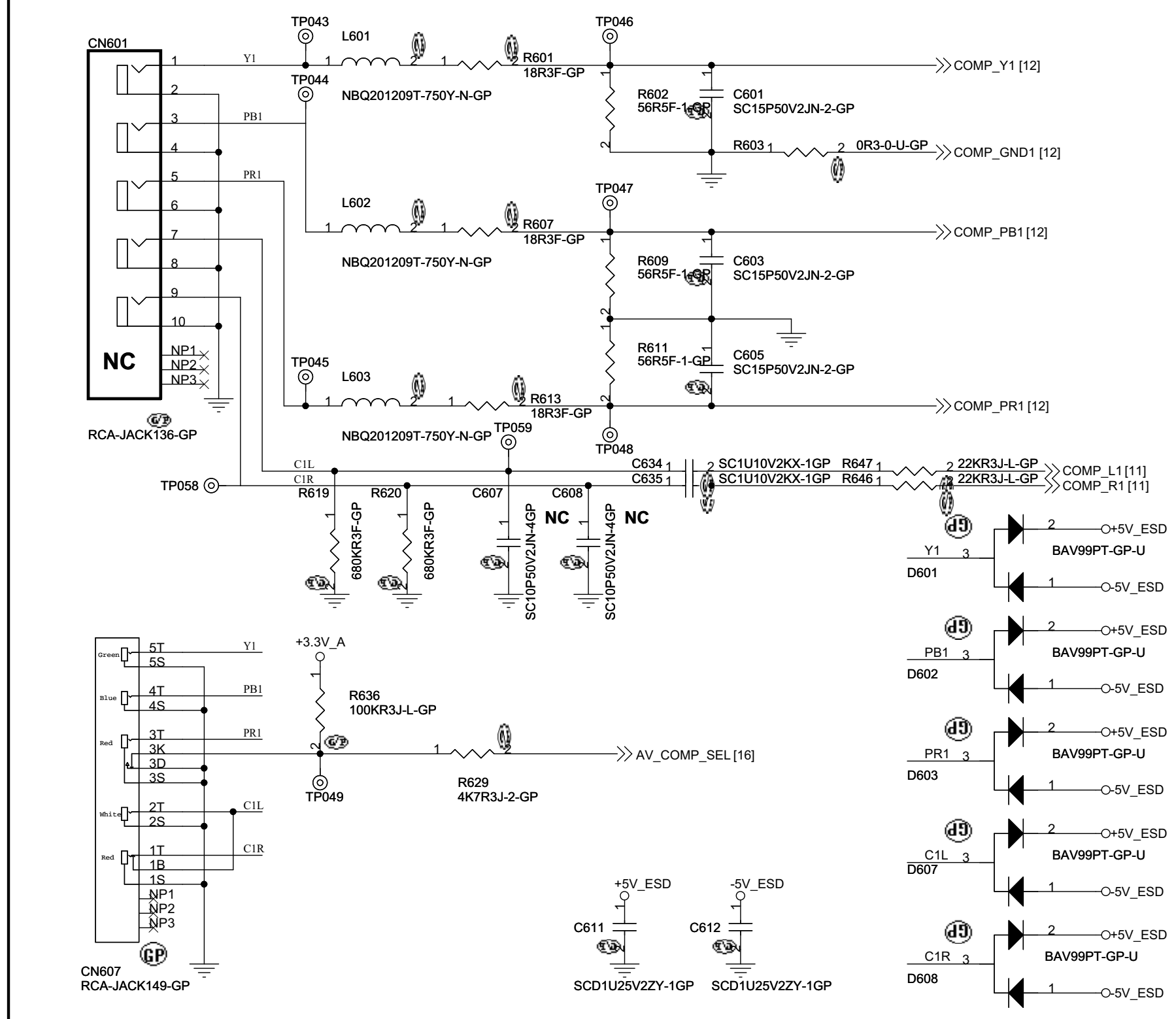




A BOARD SCHEMATIC DIAGRAM (2 OF 17)







# SIDE AV / SV INPUT

Diagram illustrating the SIDE AV / SV INPUT circuit. The circuit includes connections for AV2 (AV-2) and SV2Y (SV2C) signals, along with various components like resistors, capacitors, and diodes.

**AV2 (AV-2) Input:**

- Inputs: AV2L, AV2R, AV2[12], AV2\_SL[11], AV2\_SR[11].
- Components: R623 (18R3F-GP), R626 (56RF-1-GP), R627 (680KR3F-GP), R628 (680KR3F-GP), R630 (100KR3J-L-GP), R631 (4K7R3J-2-GP), R632 (18R3F-GP), R633 (18R3F-GP), R634 (56RF-1-GP), R635 (56RF-1-GP), C639 (SC10P50V2JN-4-GP), C638 (SC10P50V2JN-4-GP), C615 (SC10P50V2JN-3-GP), C646 (C47P50V2JN-3-GP), C645 (C47P50V2JN-3-GP), C619 (C47P50V2JN-3-GP), C640 (C47P50V2JN-3-GP).
- TP060, TP061, TP062, TP065, TP066, TP063, TP064.

**SV2Y (SV2C) Input:**

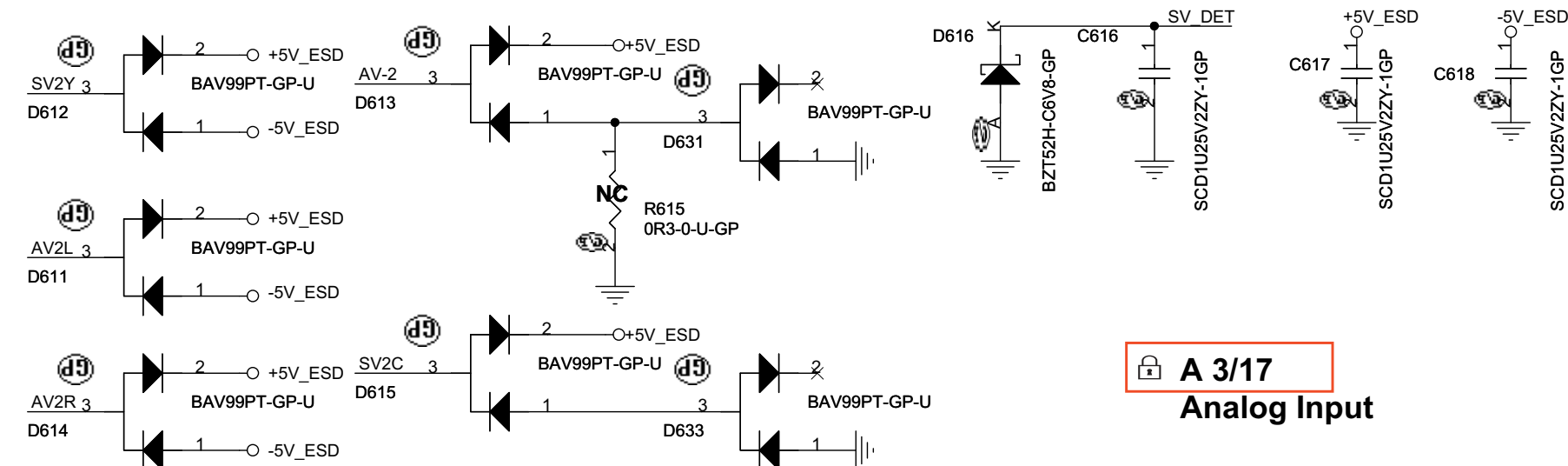
- Inputs: SV2Y, SV2C, SV\_DET\_N[12], SV2\_Y[12], SV2\_C[12].
- Components: R627 (680KR3F-GP), R628 (680KR3F-GP), R630 (100KR3J-L-GP), R631 (4K7R3J-2-GP), R632 (18R3F-GP), R633 (18R3F-GP), R634 (56RF-1-GP), R635 (56RF-1-GP), C639 (SC10P50V2JN-4-GP), C638 (SC10P50V2JN-4-GP), C615 (SC10P50V2JN-3-GP), C646 (C47P50V2JN-3-GP), C645 (C47P50V2JN-3-GP), C619 (C47P50V2JN-3-GP), C640 (C47P50V2JN-3-GP).
- TP060, TP061, TP062, TP065, TP066, TP063, TP064.

**Diodes:**

- D612, D611, D614 (BAV99PT-GP).

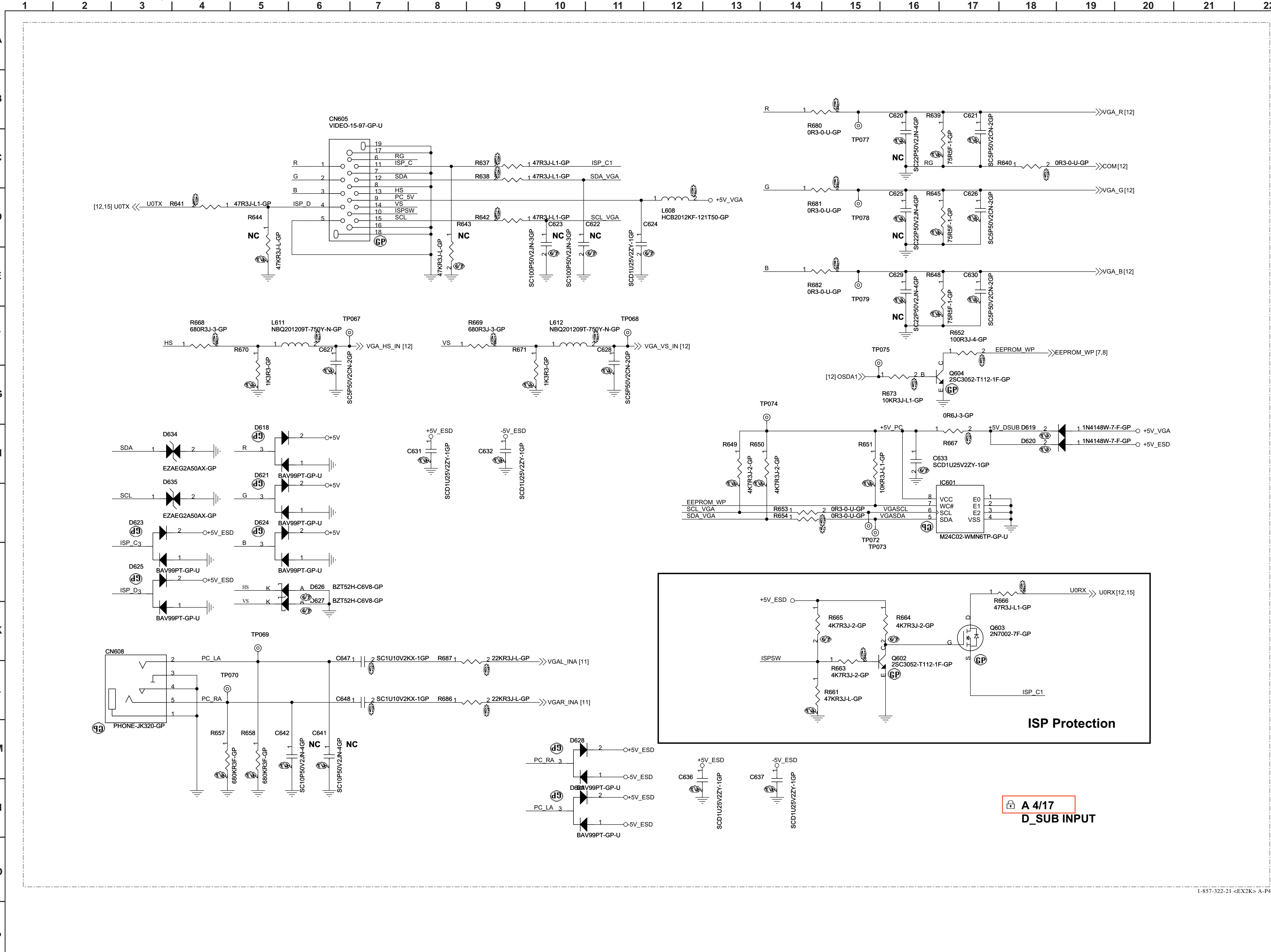
**Connectors:**

- CN603 (3T, 3S, 2T, 2S, 1T, 1S, NP1, NP2).
- CN604 (NP1, 5, 2, 3, 4, 6, NP2).
- RCA-JACK138-GP.
- SKT-JACK-270-GP-U2.

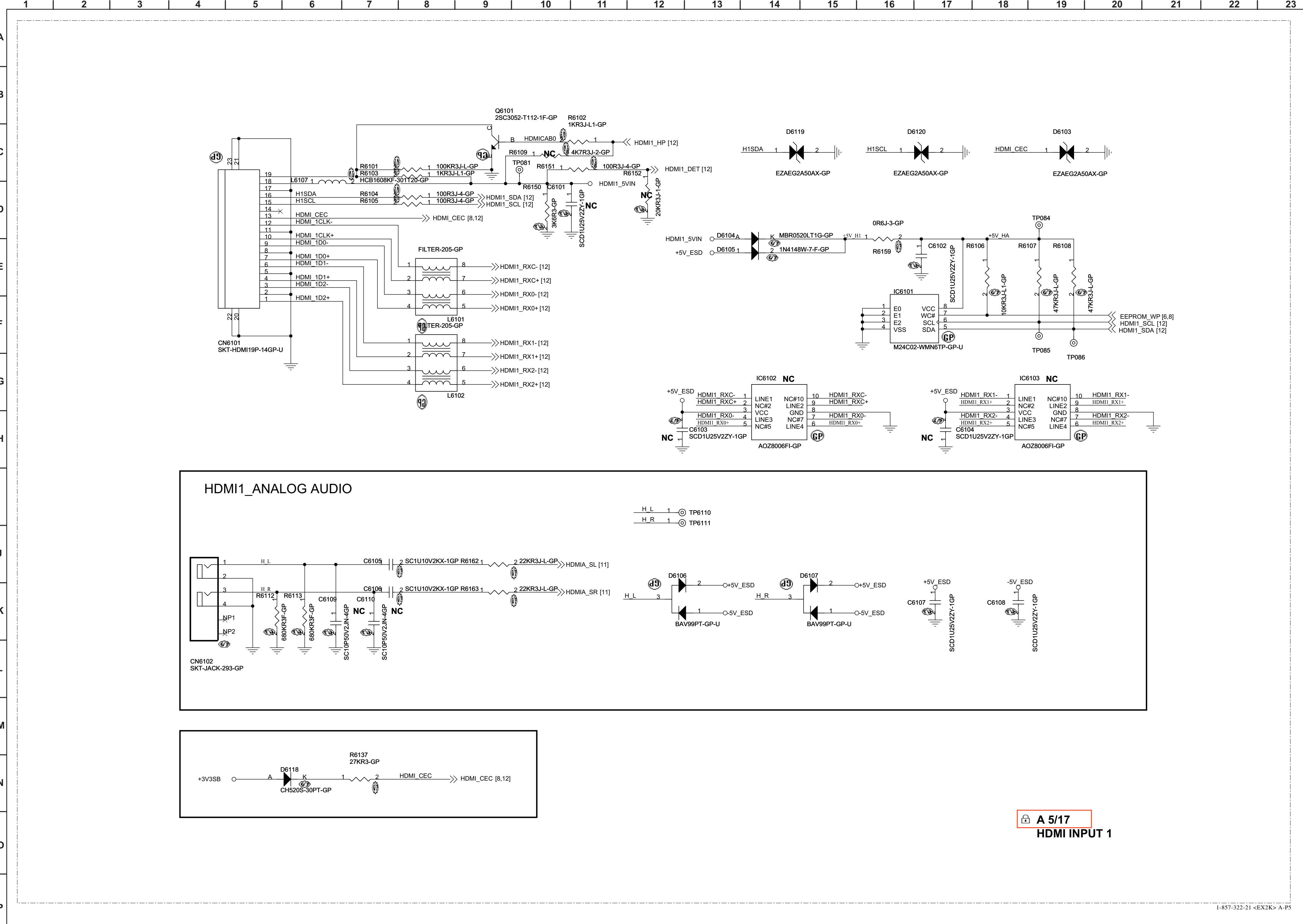


**A 3/17**  
**Analog Input**

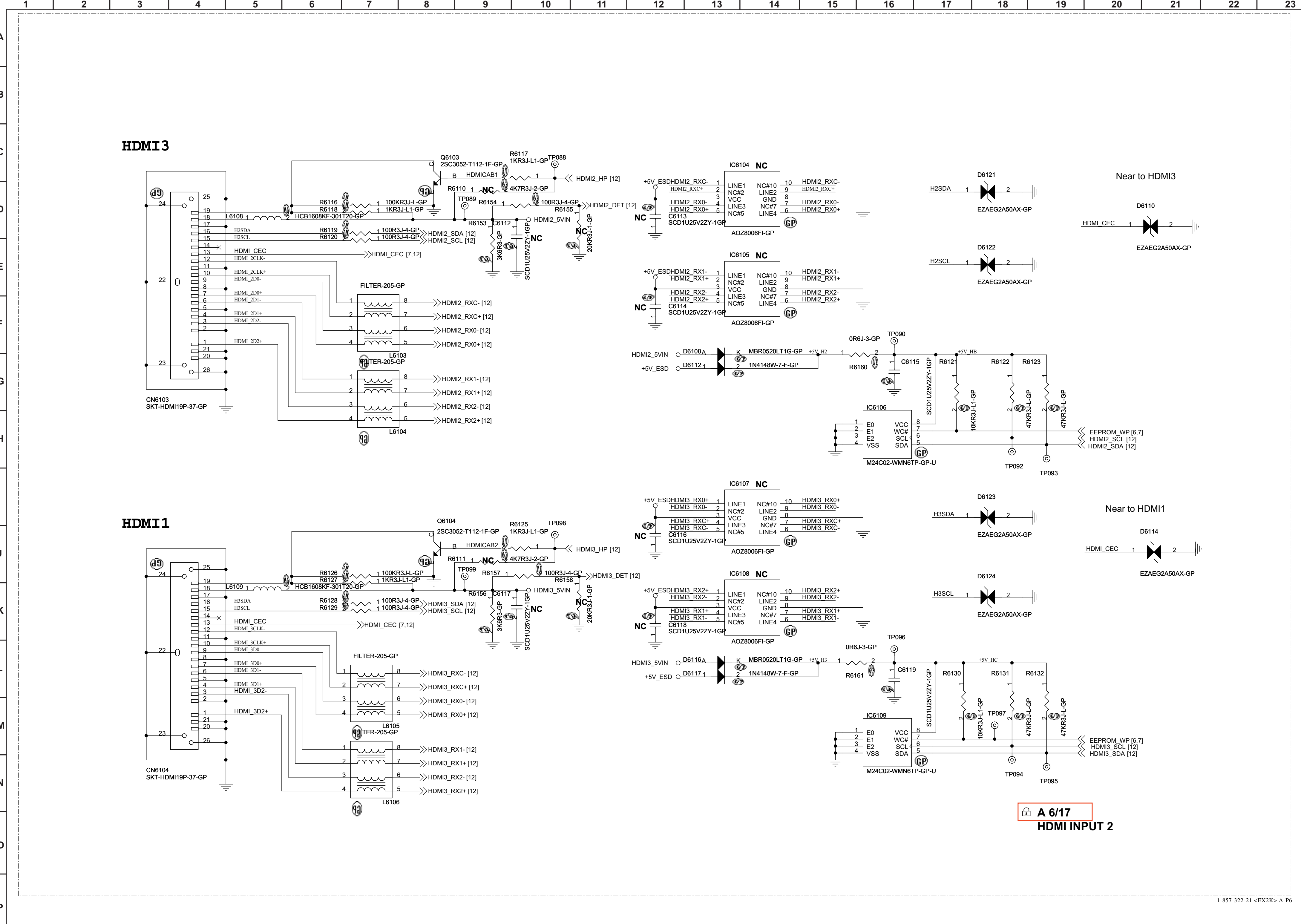
## A BOARD SCHEMATIC DIAGRAM (4 OF 17)



A BOARD SCHEMATIC DIAGRAM (5 OF 17)

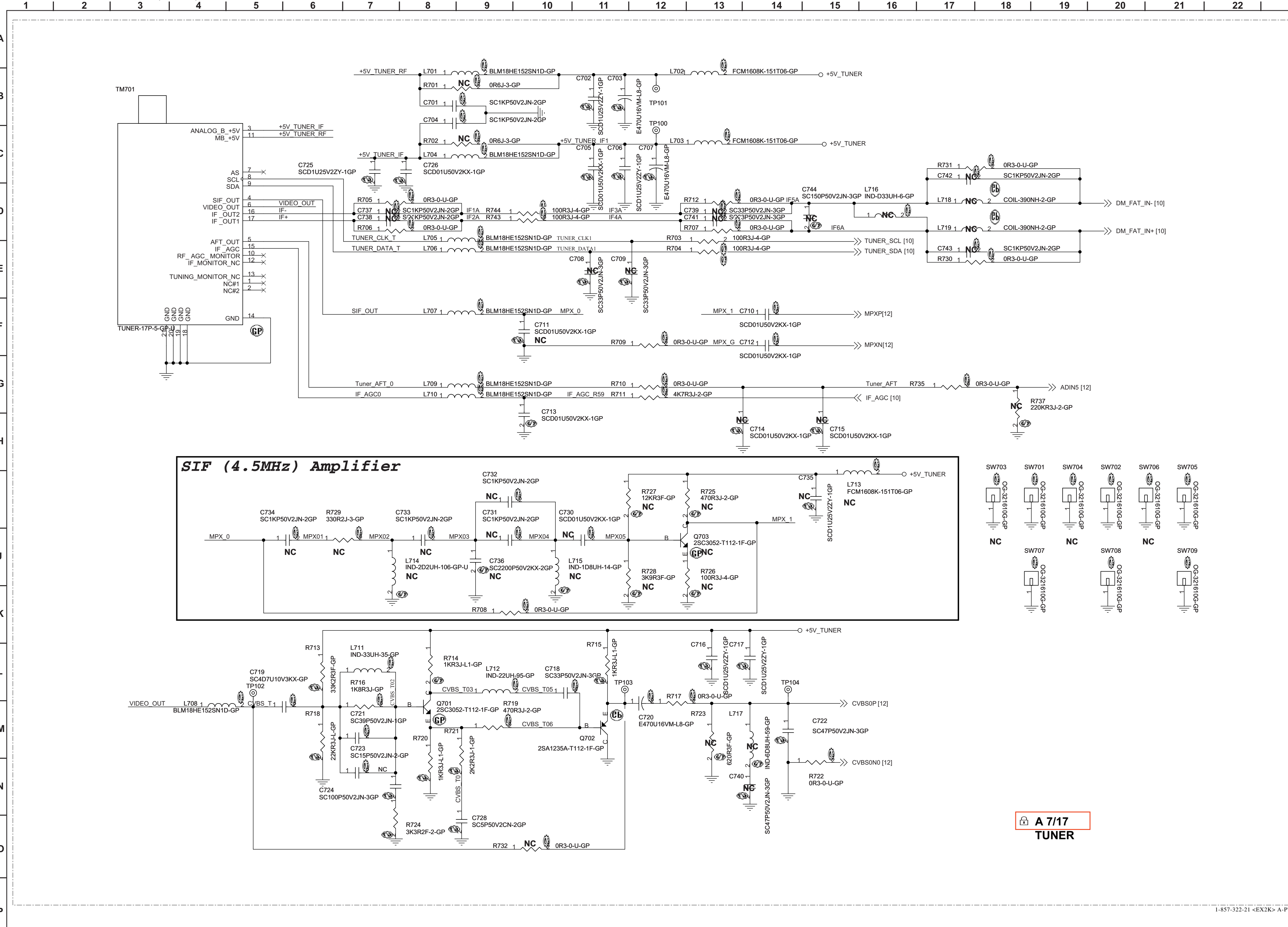


A BOARD SCHEMATIC DIAGRAM (6 OF 17)





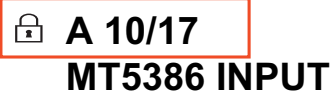
A BOARD SCHEMATIC DIAGRAM (7 OF 17)

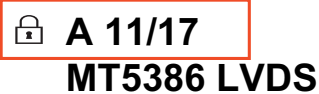
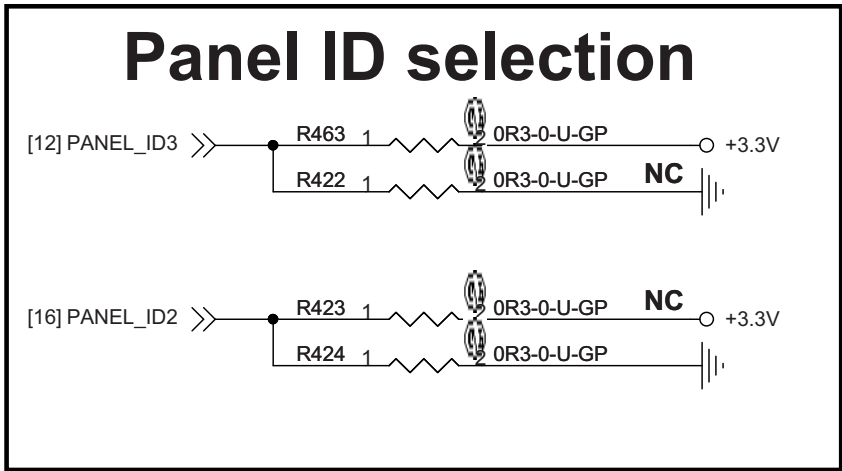




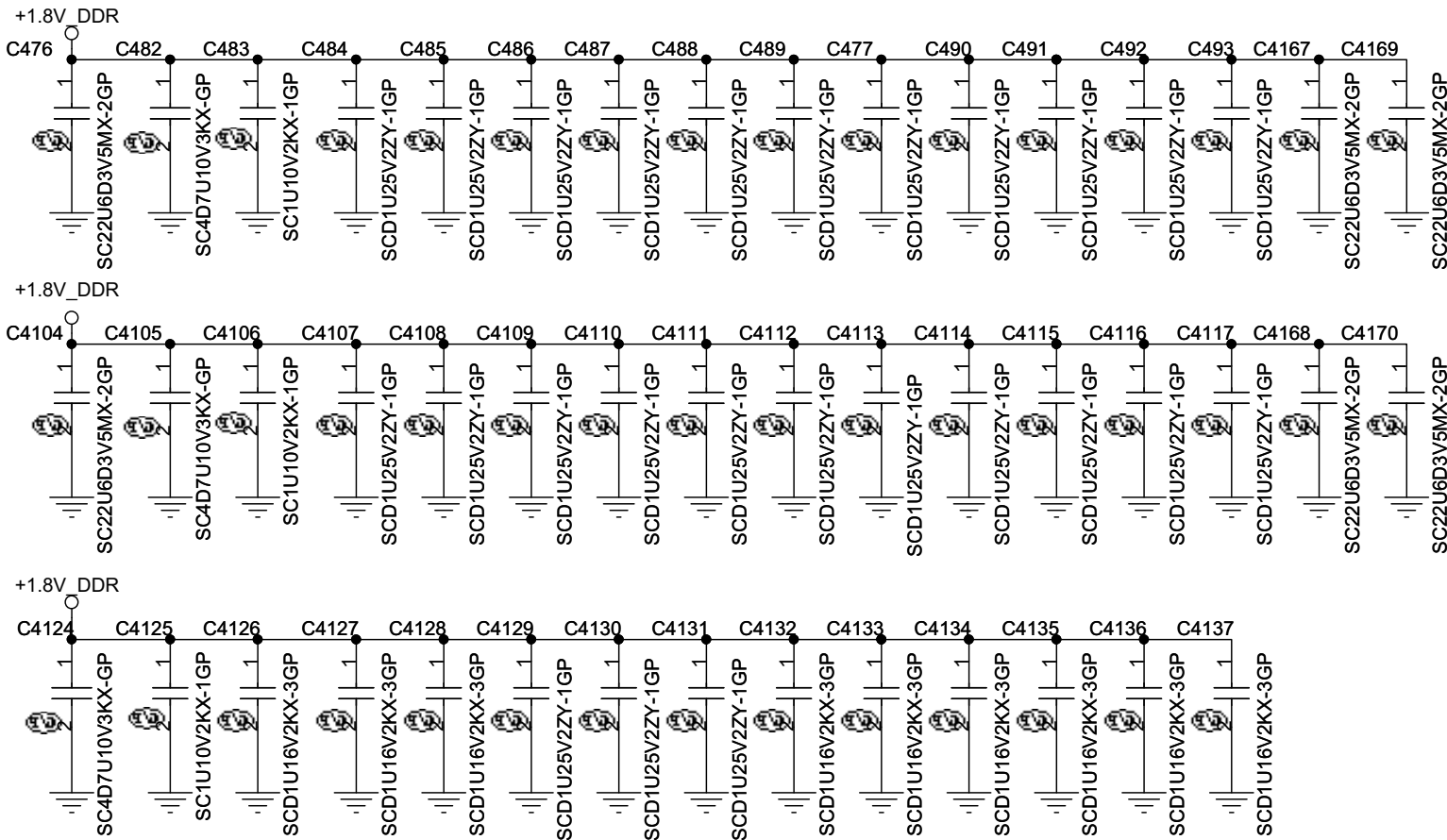






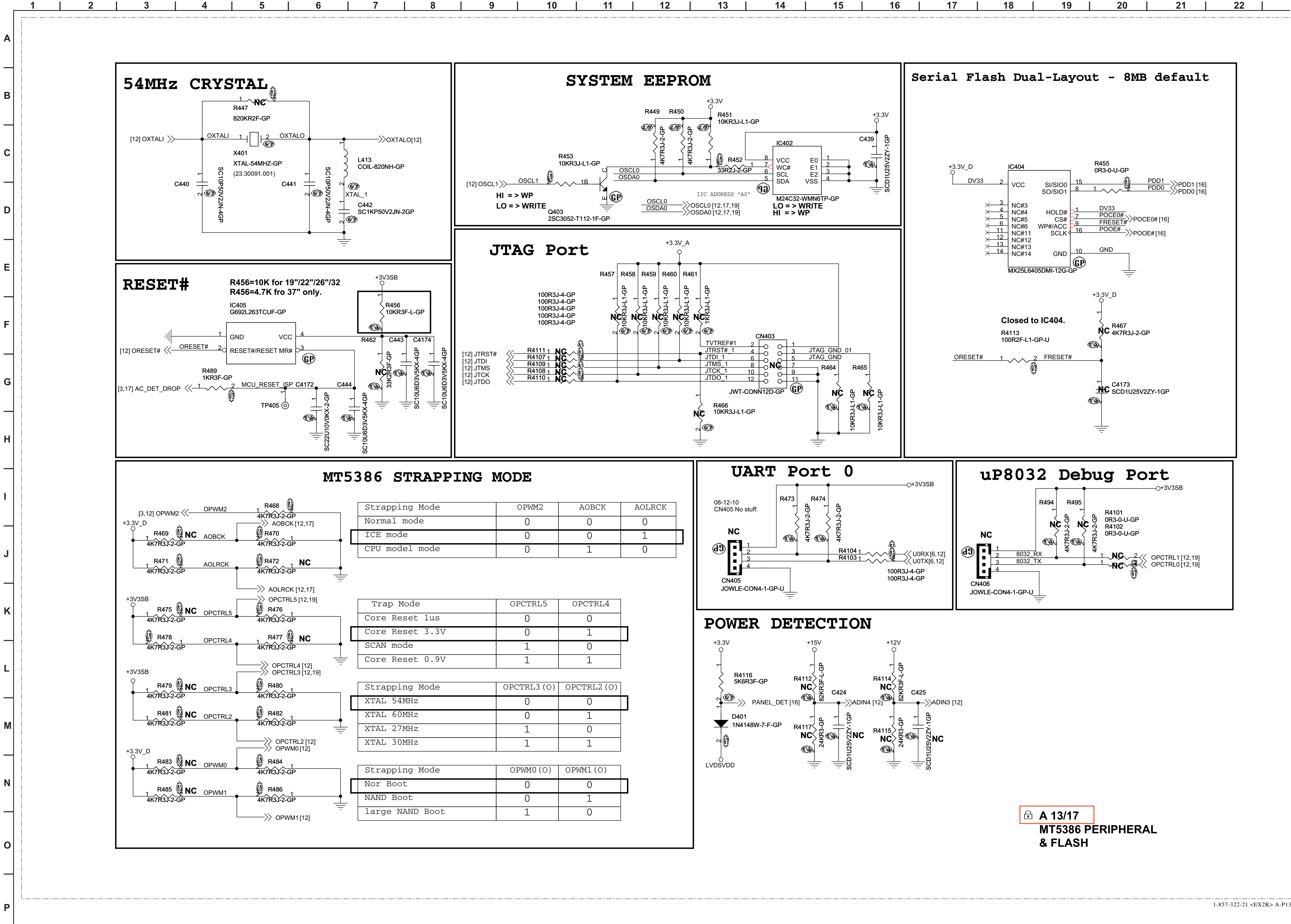


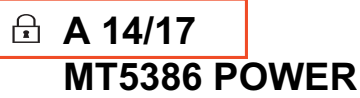




**A 12/17**  
**MT5386 DDR2**

A BOARD SCHEMATIC DIAGRAM (13 OF 17)

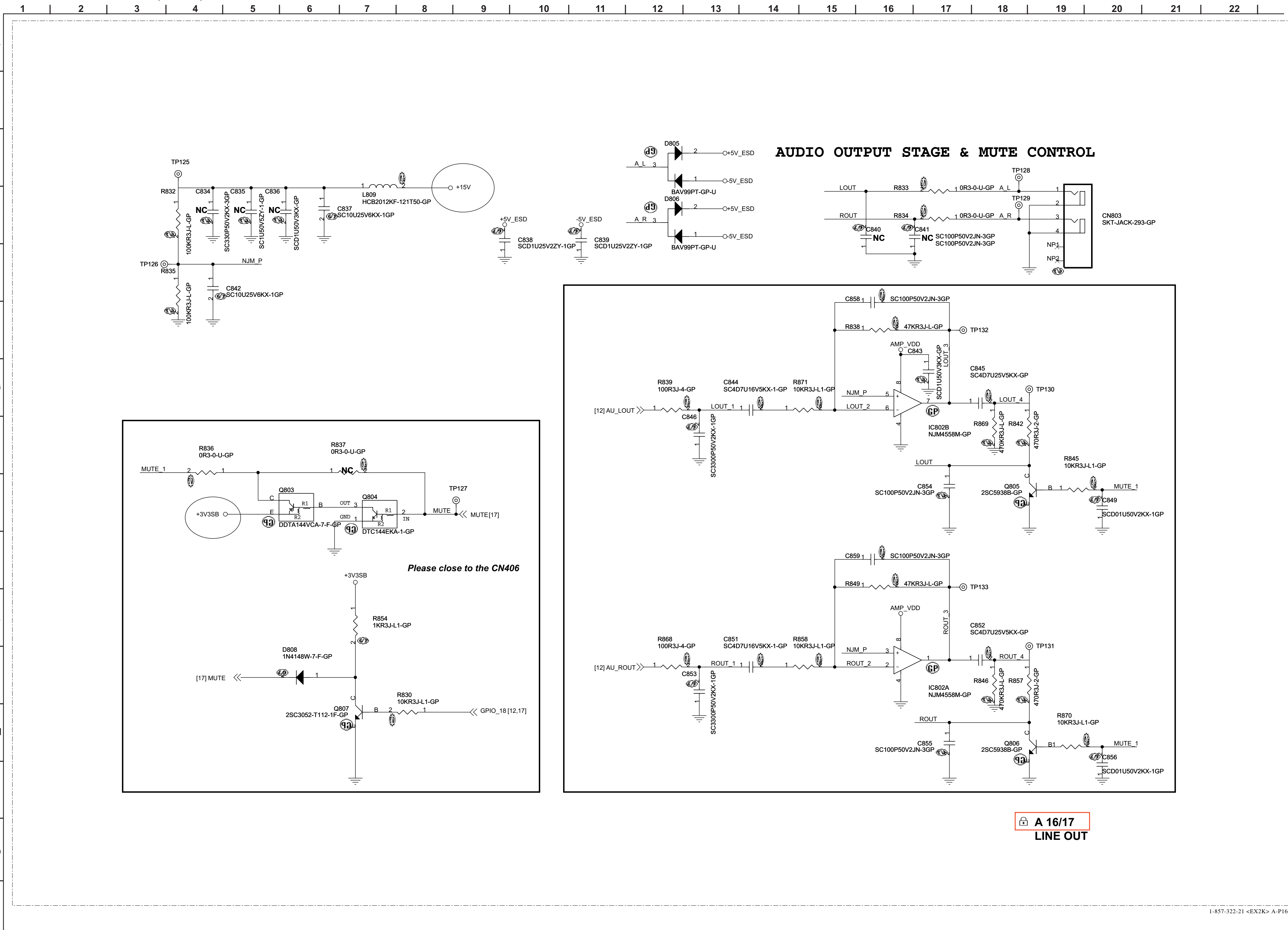




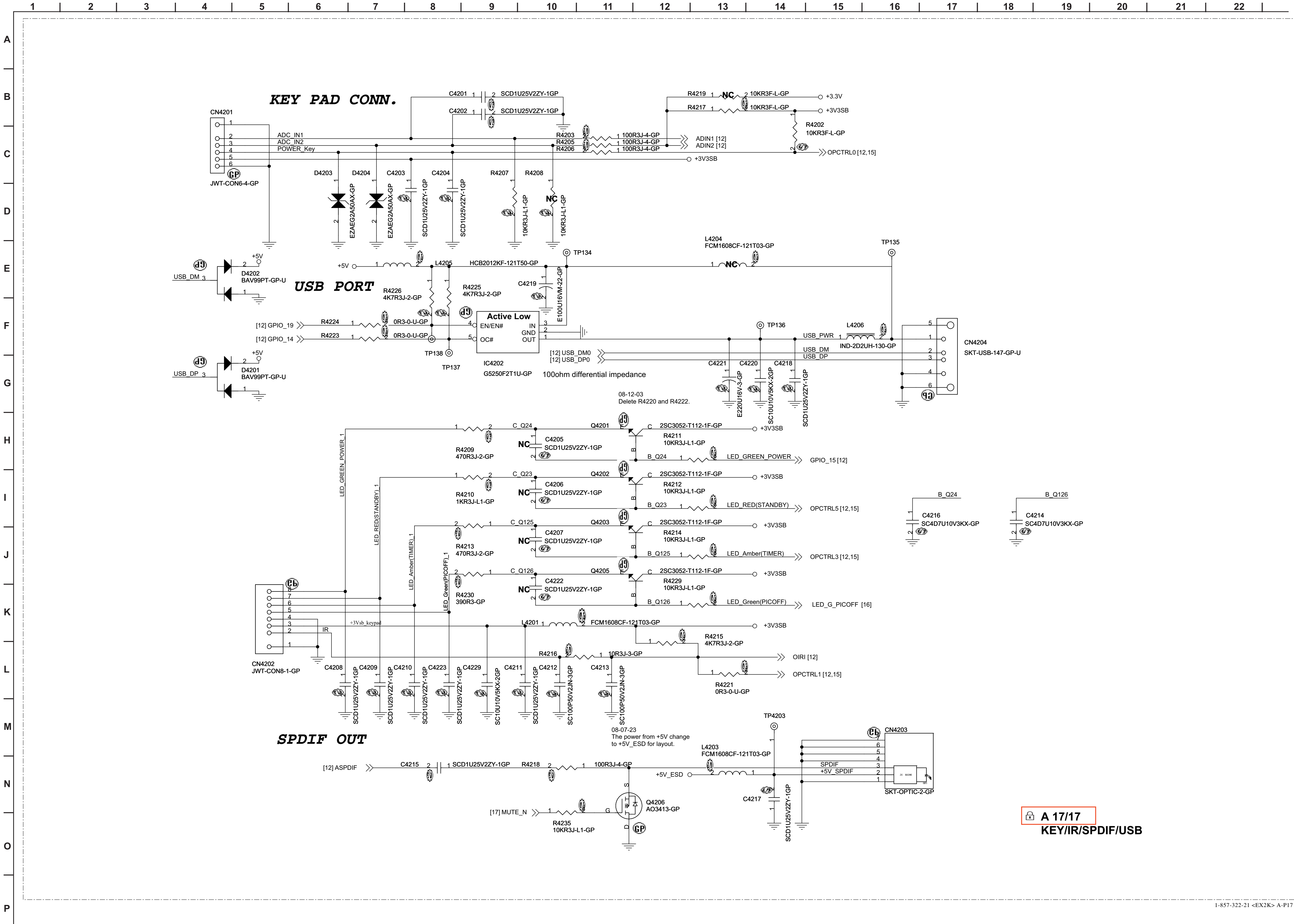




## A BOARD SCHEMATIC DIAGRAM (16 OF 17)



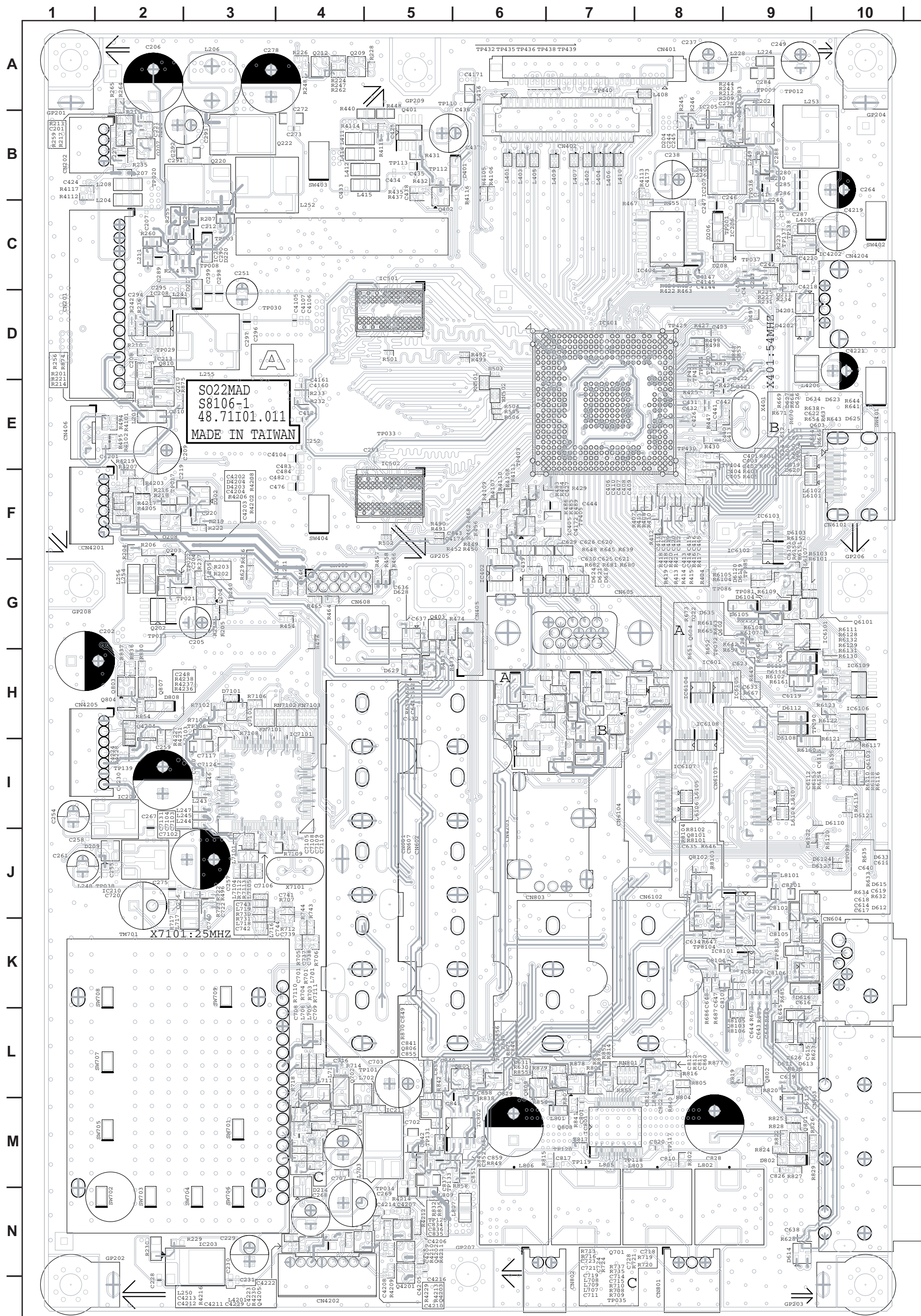
A BOARD SCHEMATIC DIAGRAM (17 OF 17)



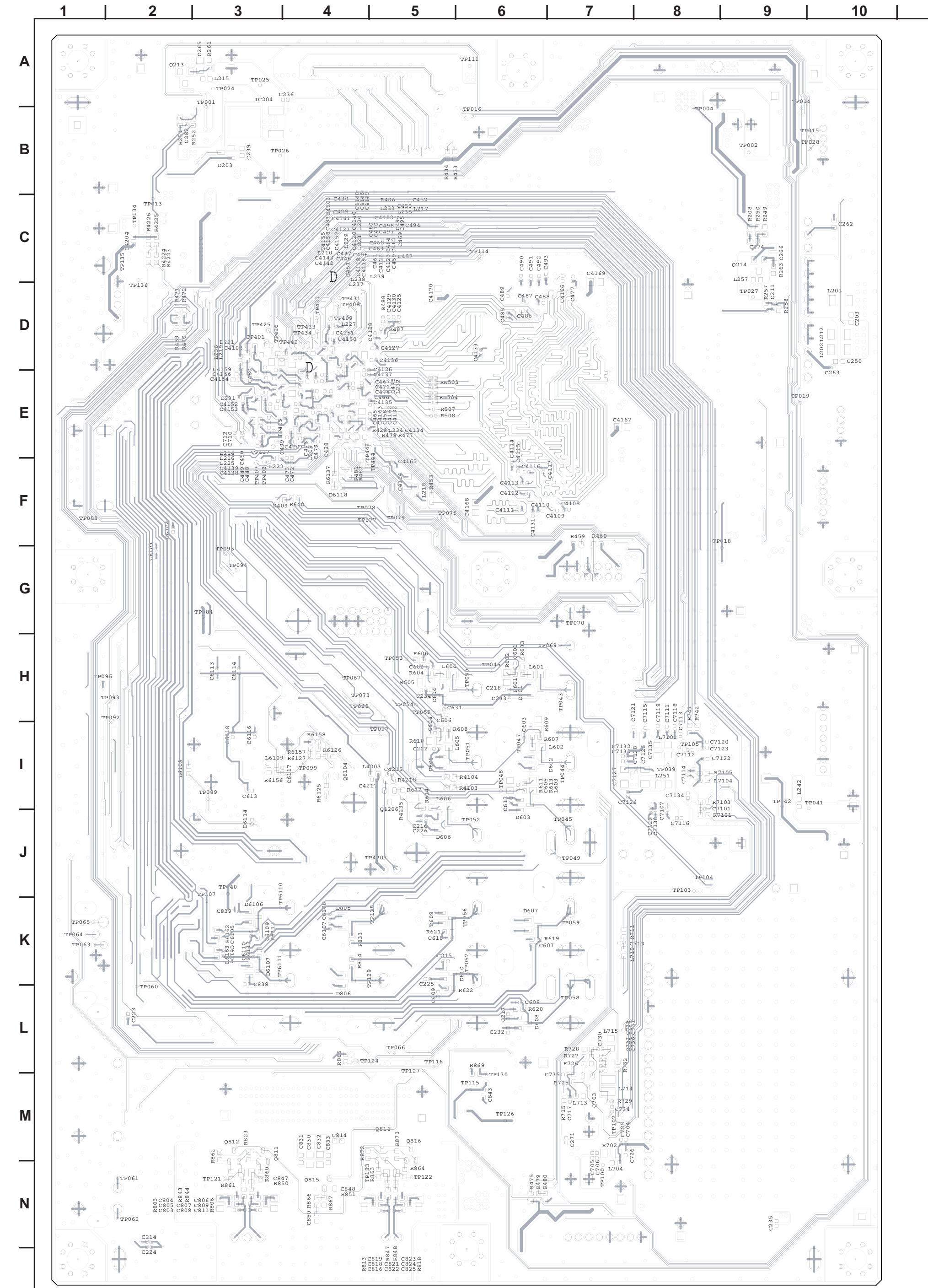




[DC CONVERTER I, DC CONVERTER II, ANALOG INPUT, D\_SUB INPUT, HDMI INPUT 1, HDMI INPUT 2, TUNER, DEMOD, AUDIO PROCESSOR, MT5386 INPUT, MT5386 LVDS, MT5386 DDR2, MT5386 PERIPHERAL & FLASH, MT5386 POWER, AUDIO AMP, LINE OUT, KEY, IR, SPDIF, USB]  
COMPONENT SIDE



[DC CONVERTER I, DC CONVERTER II, ANALOG INPUT, D\_SUB INPUT, HDMI INPUT 1, HDMI INPUT 2, TUNER, DEMOD, AUDIO PROCESSOR, MT5386 INPUT, MT5386 LVDS, MT5386 DDR2, MT5386 PERIPHERAL & FLASH, MT5386 POWER, AUDIO AMP, LINE OUT, KEY, IR, SPDIF, USB]  
CONDUCTOR SIDE

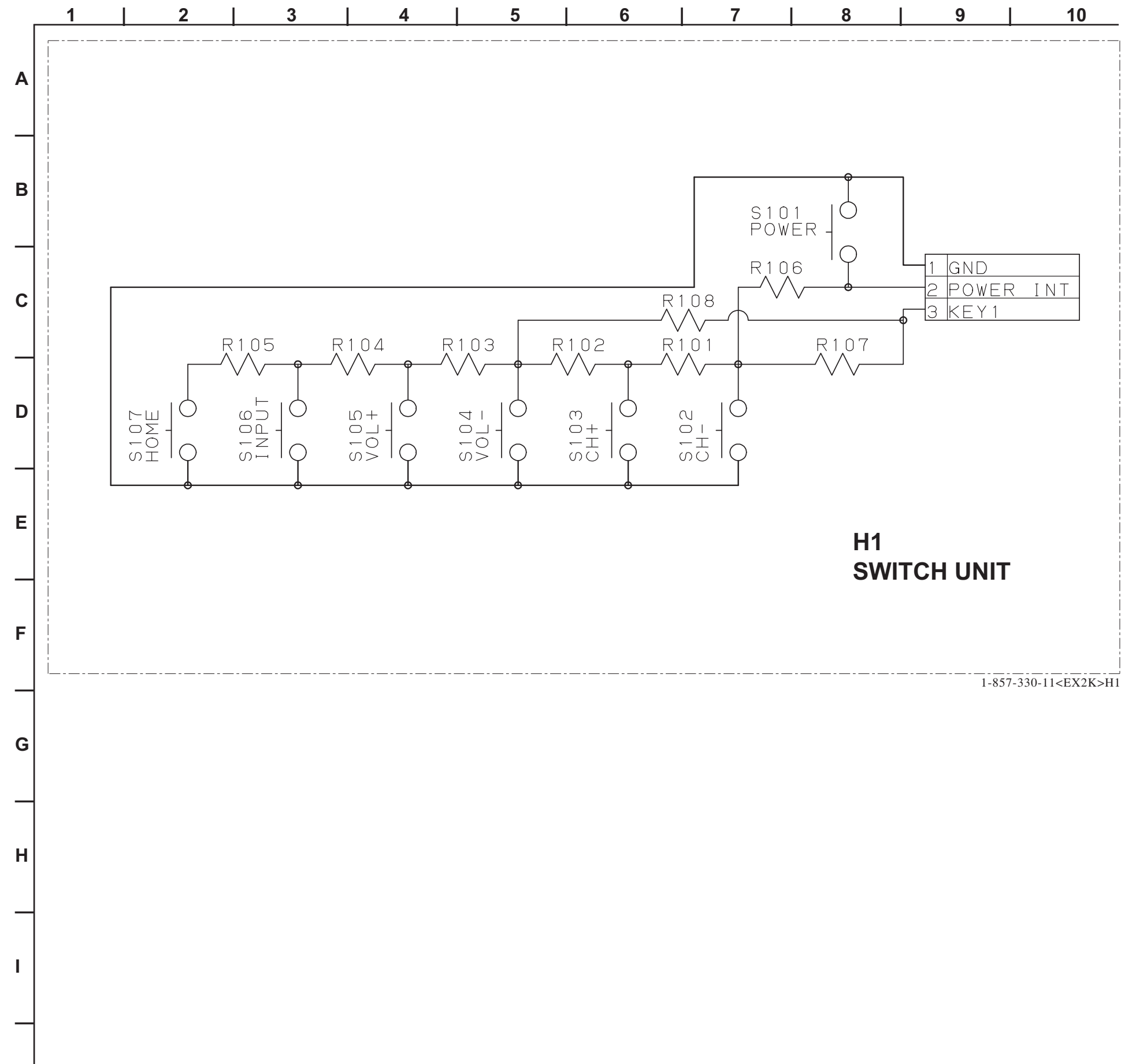




**G2BE (POWER) BOARD SCHEMATIC DIAGRAM**

THE SCHEMATICS AND PWB DIAGRAMS FOR THIS BOARD ARE NOT AVAILABLE.

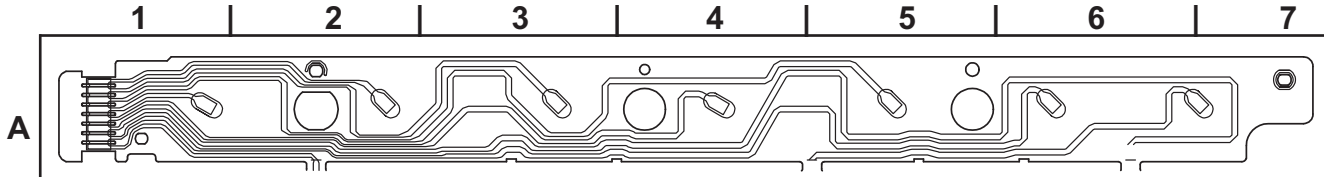
H1 BOARD SCHEMATIC DIAGRAM



H1

[SWITCH UNIT]

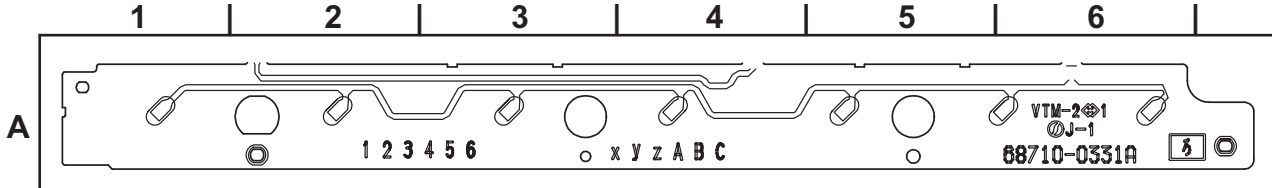
COMPONENT SIDE



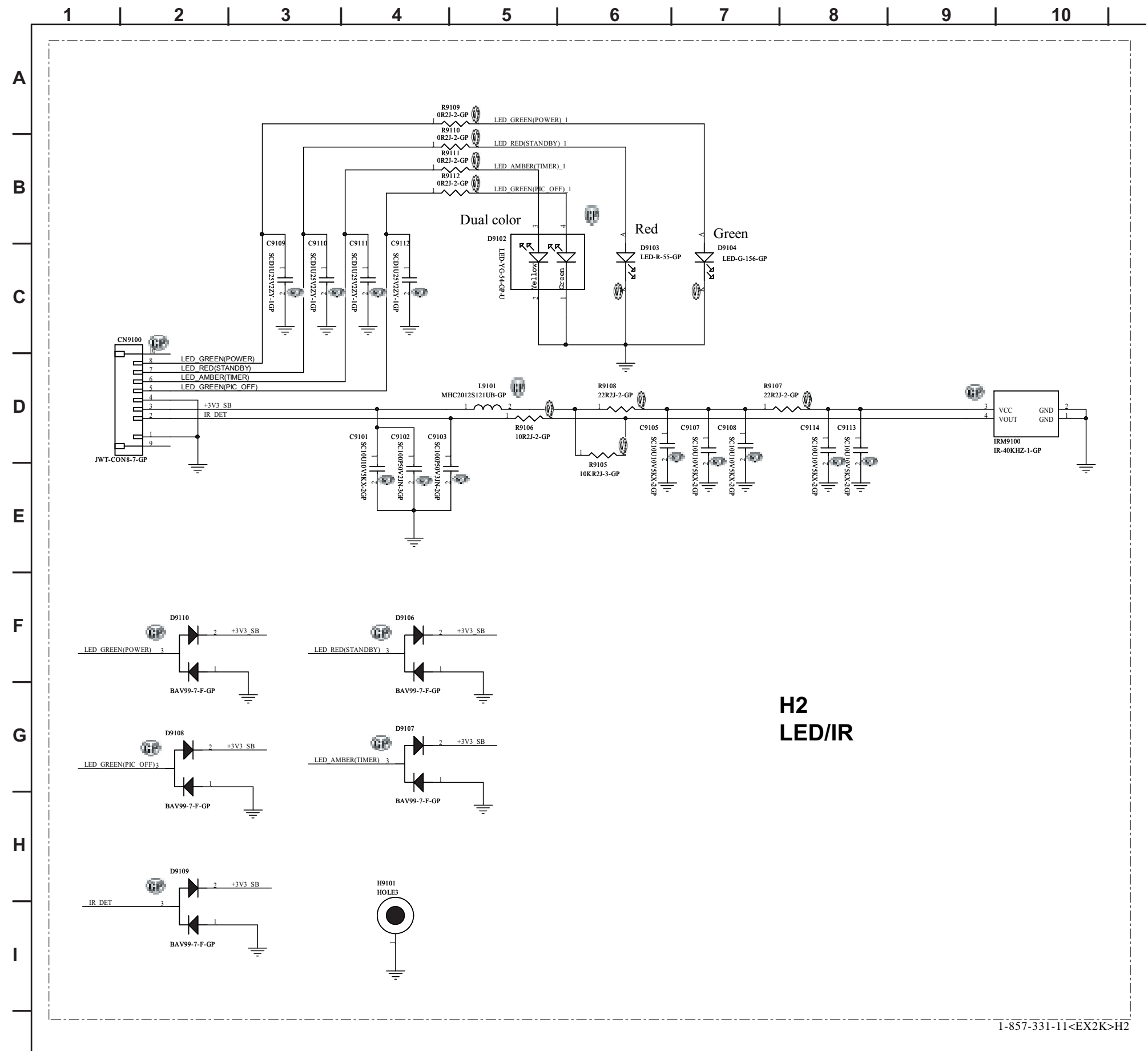
H1

[SWITCH UNIT]

CONDUCTOR SIDE



H2 BOARD SCHEMATIC DIAGRAM

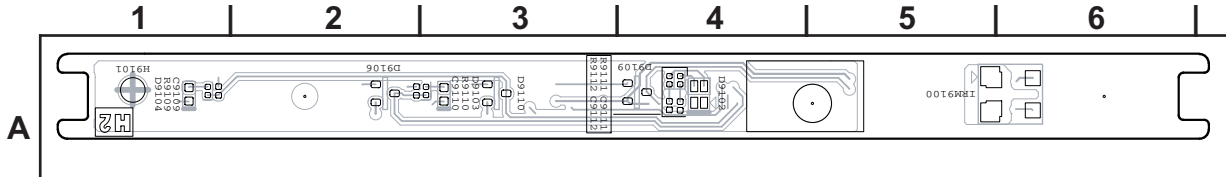




H2

[LED, IR]

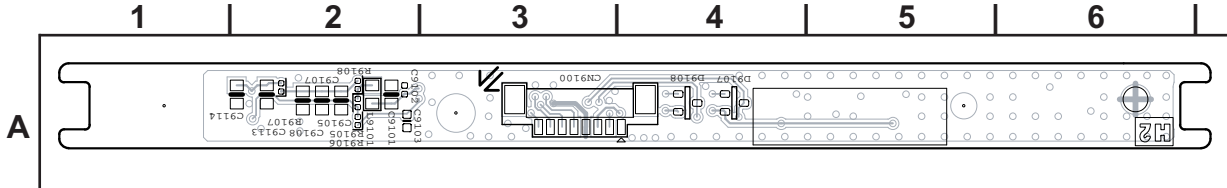
COMPONENT SIDE



H2

[LED, IR]

CONDUCTOR SIDE





SECTION 4: EXPLODED VIEWS

Components not identified by a part number or description are not stocked because they are seldom required for routine service.

The component parts of an assembly are indicated by the reference numbers in the far right column of the parts list and within the dotted lines of the diagram.




\* Items marked with an asterisk are not stocked since they are seldom required for routine service. Expect some delay when ordering these components.

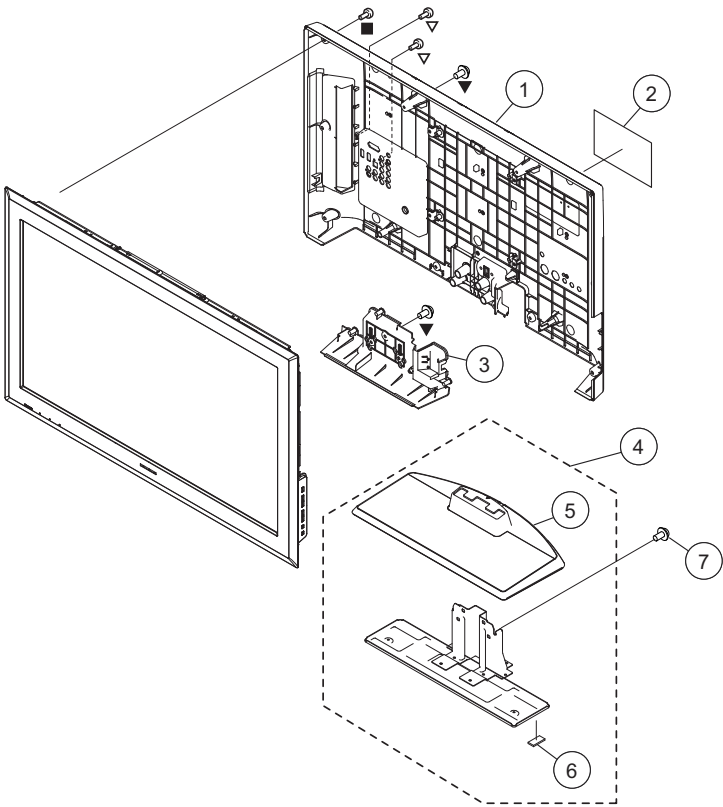
NOTE: The components identified by shading and  mark are critical for safety. Replace ONLY) with part number specified.

NOTE: The components identified by a red outline and a  mark contain confidential information. Specific instructions must be adhered to whenever these components are repaired and/or replaced. See Appendix A: Encryption Key Components in the back of this manual.


4-1. REAR COVER ASSEMBLY AND TABLE-TOP STAND ASSEMBLY


(Check the [Sony Electronics Service Information](#) website for any additional service related issues for this model.)

-  7-685-662-29 SCREW, +BVTP2 4X14
-  7-682-961-09 SCREW, +PSW M4X8
-  7-685-646-79 SCREW, +BVTP2 3X8



REF. NO.	PART NO.	DESCRIPTION	[ASSEMBLY INCLUDES]	REF. NO.	PART NO.	DESCRIPTION	[ASSEMBLY INCLUDES]
1	X-2345-468-1	REAR COVER ASSEMBLY (32)		4	X-2345-301-2	TABLE-TOP STAND ASSEMBLY (M1G)	[5-6]
2	4-159-846-01	LABEL, INFORMATION(32)		5	4-132-178-01	COVER, STAND (26)	
3	4-132-155-01	COVER, UNDER (26)		* 6	4-132-194-02	FOOT	
				7	2-580-608-01	SCREW, +PSW M5X16	
						(SCREWS TO ATTACH TABLE-TOP STAND TO LCD TV)	
						For product protection and safety reasons, Sony strongly recommends that you use the screws provided with the TV	
						CAUTION: These screws cannot be used to secure the TV to the Wall Mount Brackets.	

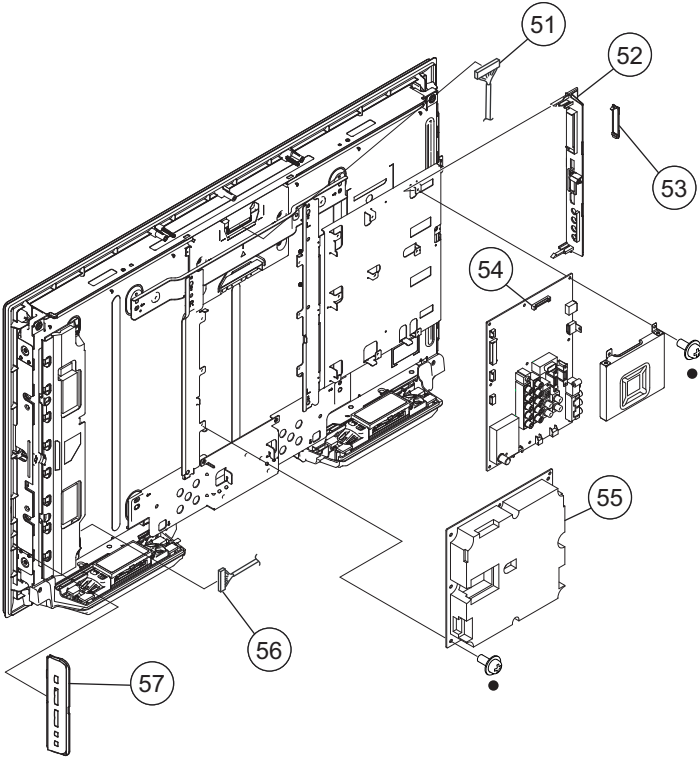
NOTE: The components identified by shading and  mark are critical for safety. Replace ONLY) with part number specified.



NOTE: The components identified by a red outline and a  mark contain confidential information. Specific instructions must be adhered to whenever these components are repaired and/or replaced. See Appendix A: Encryption Key Components in the back of this manual.


4-2. CHASSIS


(Check the [Sony Electronics Service Information](#) website for any additional service related issues for this model.)

- 4-382-854-01
- SCREW, +PSW M3X8



REF. NO.	PART NO.	DESCRIPTION	[ASSEMBLY INCLUDES]	REF. NO.	PART NO.	DESCRIPTION	[ASSEMBLY INCLUDES]
51	NA	(LVDS) CONNECTOR ASSEMBLY FOR ALL LVDS CONNECTOR PART NUMBER INFORMATION REFER TO THE LCD PANELS SERVICE MANUAL		55	1-474-163-41	G2BE (POWER) BOARD, COMPLETE	
52	4-132-171-01	COVER, SIDE JACK (22)		56	NA	CONNECTOR ASSEMBLY INVERTER 32 FOR ALL INVERTER CONNECTOR PART NUMBER INFORMATION REFER TO THE LCD PANELS SERVICE MANUAL	
53	3-874-663-01	COVER, USB		57	1-487-346-11	SWITCH UNIT (Contains H1 Board)	
  54	N/A	A BOARD, MOUNTED FOR ALL A BOARD, MOUNTED PART NUMBER INFORMATION REFER TO THE LCD PANELS SERVICE MANUAL					

NOTE: The components identified by shading and  mark are critical for safety. Replace ONLY) with part number specified.

NOTE: The components identified by a red outline and a  mark contain confidential information. Specific instructions must be adhered to whenever these components are repaired and/or replaced. See Appendix A: Encryption Key Components in the back of this manual.

4-3. BEZEL ASSEMBLY AND LCD PANEL

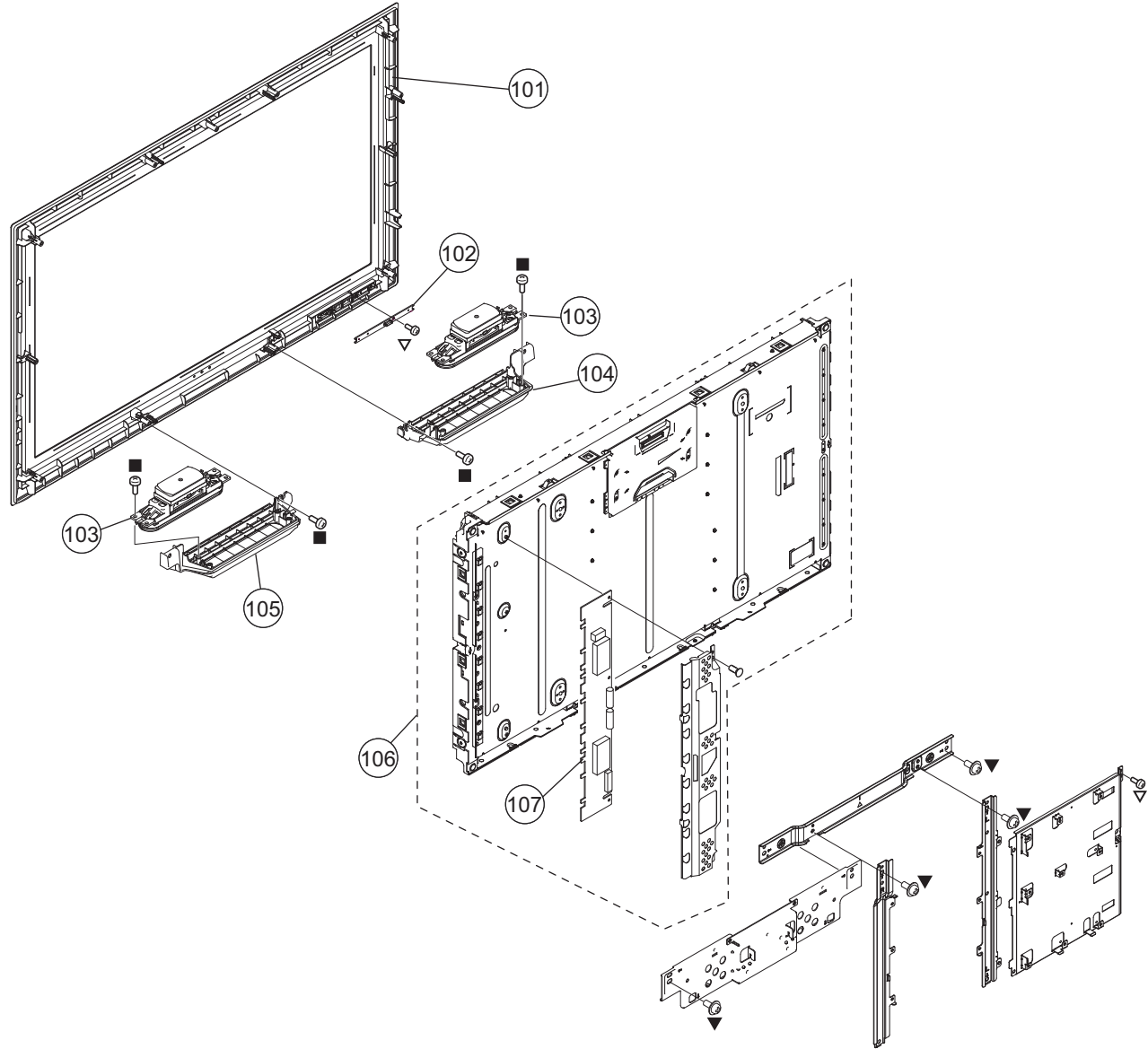
(Check the [Sony Electronics Service Information](#) website for any additional service related issues for this model.)

- 7-685-662-29
- SCREW, +BVTP2 4X14
- ▼
- 7-682-961-09


SCREW, +PSW M4X8


▽

SCREW, +BVTP2 3X8 TYPE2 IT-3



REF. NO.	PART NO.	DESCRIPTION	[ASSEMBLY INCLUDES]	REF. NO.	PART NO.	DESCRIPTION	[ASSEMBLY INCLUDES]
101	X-2515-249-1	BEZEL ASSEMBLY(32)		106	NA	LCD PANEL (32 INCH WXGA TFT)	[107]
102	1-857-331-21	H2 BOARD, MOUNTED				FOR ALL LCD PANEL PART NUMBER INFORMATION	
103	1-826-873-11	LOUDSPEAKER (3.4X17.5CM)				REFER TO THE LCD PANELS SERVICE MANUAL	
104	4-132-151-01	PLATE, SP BAFFLE L (32)		107	NA	ETC-INVERTER MT BOARD	
105	4-132-150-01	PLATE, SP BAFFLE R (32)				FOR ALL INVERTER BOARD PART NUMBER INFORMATION	
						REFER TO THE LCD PANELS SERVICE MANUAL	

NOTE: The components identified by shading and  mark are critical for safety. Replace ONLY) with part number specified.


NOTE: The components identified by a red outline and a  mark contain confidential information. Specific instructions must be adhered to whenever these components are repaired and/or replaced. See Appendix A: Encryption Key Components in the back of this manual.





#### 4-4. SCREW LEGEND

(Check the [Sony Electronics Service Information](#) website for any additional service related issues for this model.)

##### KDL-32L504

	P/N	DESCRIPTION	QUANTITY	TOTAL
■	7-685-662-29	SCREW, +BVTP2 4X14	RC-12 SPKR BRKT-2 SPKR-8 LCD-2	24
□	7-682-973-49	SCREW, +PSW M5X16	TABLE-TOP STAND-4	4
▼	7-682-961-09	SCREW, +PSW M4X8	RC-2 UC-1 SPINE-4 BTM BRKT-2 TOP BRKT-2	13
▽	7-685-646-79	SCREW, +BVTP 3X8	RC-1 TERMINAL-2 H2-1 MAINBRKT-1	5
●	4-382-854-01	SCREW, +PSW M3X8	G2BE BOARD-6 A BOARD -9	15




NOTE: The components identified by shading and  mark are critical for safety. Replace ONLY) with part number specified.

REF. NO.	PART NO.	DESCRIPTION	VALUES	REF. NO.	PART NO.	DESCRIPTION	VALUES
 <b>ACCESSORIES AND PACKING</b>				 <b>MISCELLANEOUS</b>			
	1-836-501-11	AC POWER SUPPLY CORD WITH CONNECTOR		7-685-646-79		SCREW, +BVTP 3X8 TYPE2 IT-3	
	A-1743-249-A	ACCESSORY ASSEMBLY		2-580-608-01		SCREW, +PSW M5X16	
*	4-144-291-01	BAG, PROTECTION (32)		(SCREWS TO ATTACH TABLE-TOP STAND TO LCD TV)			
*	4-132-218-01	CUSHION, BL (32)		For product protection and safety reasons, Sony strongly recommends			
*	4-132-217-01	CUSHION, TL (32)		that you use the screws provided with the TV			
	4-159-784-11	GUIDE, QUICK SET UP		<b>CAUTION: These screws cannot be used to secure the TV to</b>			
	4-160-127-01	INDIVIDUAL CARTON(32)		<b>the Wall Mount Brackets.</b>			
	4-159-783-11	MANUAL, INSTRUCTION		X-2348-141-2		SUPPORT BELT KIT	
				Contains the following 5 items:			
				2-580-604-01		SCREW, +PSW M4X20	
				2-580-639-01		SCREW, +BVTP 4X12 TYPE2 IT-3	
				2-580-663-02		SCREW, WOOD 3.8X20	
				4-124-351-01		BRACKET, FALL LOCK	
				4-133-849-02		BELT, FALL LOCK	
				 <b>REMOTE COMMANDER</b>			
				1-487-180-11		REMOTE COMMANDER (RM-YD028)	
				9-885-117-43		COVER, BATTERY (For RM-YD028)	

## APPENDIX A: ENCRYPTION KEY COMPONENTS

Encryption key components developed by Sony Corporation contain confidential information, and shall be handled under the non-disclosure obligations provided in the applicable agreement with Sony Corporation (and/or its subsidiary).

As part of this agreement specific instructions must be adhered to whenever a Circuit Board containing encryption key components is repaired and/or replaced pursuant to the following:

- 1) In the service manual the Circuit Board(s) containing encryption key components shall be identified with a **red outline and a .**
- 2) Only repair boards or components listed in the service manual shall be utilized for replacement and/or repair.
- 3) Disassembly, decryption, or reverse-engineering component(s) is strictly prohibited.
- 4) Any board in which the Servicer replaces an encryption key component must be placed back into the set it originally came from and the replaced defective component **MUST BE DESTROYED**. Boards cannot be swapped.
- 5) If a Circuit Board identified with a **red outline and a .** in the service manual is deemed to be defective:
  - a) and if a core charge is imposed and is covered under the product warranty, the defective un-repaired or modified board **MUST BE RETURNED** to Sony.
  - b) and if the core charge is **NOT** covered under the product warranty, the defective un-repaired or modified board **MUST BE DESTROYED**.
- 6) If a unit is destroyed (such as field scrap), the Circuit Board identified with a **red outline and a .** in the service manual **MUST BE DESTROYED**.

*In an effort to reduce the size of this pdf file the tiled schematics are not attached to this Service Manual. To receive a complete set of the tiled schematics for this manual please submit a request to the Service Promotion Department at [Service\\_Promotion@am.sony.com](mailto:Service_Promotion@am.sony.com).*